THE
MONTHLY REVIEW,
For APRIL, 1799.

ART. I. *The View of Hindustan.* 4to. 2 Vols. 2l. 12s. 6d. Boards. White. 1798.

INDIA and Hindustan are appellations bestowed, somewhat arbitrarily, on the fair and fertile region which is bounded by the Indus on one side, while on the other it stretches beyond the eastern banks of the majestic Brahmaputro; the lofty mountains of Imaus forming its boundary on the north, and the ocean washing its southern extremities. The natives, however, know those appellations only as foreign terms. The Greeks probably called the inhabitants of the western countries, Indians, for the same reason that we find the Gangaridæ seated near the Ganges. The word Hindu-stan is a Persic compound, signifying the country of black people, as we say Negroe-land; and it seems remarkable that Siam, or Siama-stan, as it is named in Sanscrit, should have the same signification in that language, which Hindustan bears in Persic. If it were meant to include, under the latter term, all the countries inhabited by Hindus,—that is, by a people professing the doctrine of the Vedas, and speaking a dialect of the Sanscrit,—the boundaries are manifestly too contracted, and ought probably to extend as far as Tartary on the north, and to China on the east. On the other hand, if by the word Hindustan it were intended to designate the specific limits of one great empire, to what period shall we assign its existence? Ramachundra, (the hero of a sublime epic poem, entitled Ramayon,) whose capital was contiguous to the modern city of Fyzabad, in the province of Oude, certainly carried his arms as far as Ceylon; unless we class his expedition with the fabled exploits of a Sesostris, or a Semiramis: but the extent of his dominions laterally is unknown. Alexander found the country divided into a number of petty sovereignties. Sultan Mahmûd had the same good fortune; Lahor, Multan, Delhi, Agimer, and Canoja, had each a Rajah, and each of them met a conqueror in Mahmûd. The Mogul empire attained its greatest extent about the middle of Aurengzebe's reign, but it never embraced the whole of Hin-

dustan. The Rajahs who ruled in the peninsula, and whose ancestors had founded their independence on the ruins of the Vijanagar empire, preserved their petty but inaccessible territories, while the more powerful monarchies fell before the Mogul invaders.

The volumes before us furnish a pleasing specimen of that persevering industry and diligent research, which have so long distinguished the venerable author. Mr. Pennant began the composition of them in his 71st year, and extracted the materials from the 14th and 15th volumes of a manuscript work, entitled "Outlines of the Globe," the whole of which may one day see the light. The following plan has been adopted in that portion of it now presented to the public:—After having traced the Indus and its tributary streams from their source to their confluence with the ocean, and given some account of the antient and modern condition of the cities and provinces in its vicinity, the author proceeds in the same manner along the coast to Cape Comorin. The rivers which disembogue themselves within that extent of maritime border are also deduced from their origin; and, as most of the principal places are contiguous to one of them, the work includes a tolerably complete geographical view of the whole country. The natural productions are particularized; the manners and customs of the inhabitants are sometimes mentioned; and the curiosities of nature or art are described as they occur. From Cape Comorin, the author passes into Ceylon; and after having made a circuit of the island, he returns to the continent, resumes his survey, and proceeds along the coasts of Coromandel, Selingana, Orissa, and Bengal, to the point at which the united floods of the Ganges and Brahmaputro mix with the sea.

This work can derive but little merit from novelty; for who is unacquainted with the classical recreations of Sir William Jones, the geographical accuracy of Major Rennell, or the comprehensive remark of M. Bernier?—Mr. Orme, Mr. Gladwin, Col. Dow, Capt. Scott, and the narratives of the late wars, have supplied Mr. P. with historical information; and the previous labors of our author himself, of Dr. Roxburgh, of Dr. Russel, and of the naturalists of Ceylon, have furnished the materials for natural history; while the views taken by Mr. Hodges and Mr. Daniel have enabled him to describe a great variety of magnificent structures. From these sources, Mr. Pennant has compiled an agreeable work; which, by avoiding abstruse inquiries, is calculated to please the generality of readers; and which, to persons who are unacquainted with the publications abovementioned, will add instruction to amusement.

Our

Our readers will be enabled to form a correct idea of the manner in which Mr. P. has executed this production, from the extracts that we shall now subjoin. We select such as relate to countries little known to Europe. In the first, they will find an account of the great river Crisna, (Mr. P. writes *Krishna*,) and its tributary waters.

'From Gangapatam, on the northern mouth of the Pennar, the land runs due north as far as Motapilli, when it forms a strong curve towards the east; the point of which is one side of the great river Crisna, in about lat. 15° 43′. Its Delta, which winds round as far as Masulipatam, is not considerable. This river annually overflows a vast tract of country, like the Indus on the western side of this empire, and like all the other great rivers on this extensive coast. The Crisna rises from the foot of the western Ghauts, and not more than forty-five miles from Severndrug, on the western coast. There is another branch to the east, that rises still more northerly. On the side is Sattara, a strong fortress, the capital of the Mahratta state, in the time of the Rajahs of Sivaji's race: it was taken by him in 1673, and found to be the depository of immense treasure; at that time it belonged to the king of Vijapur: it was afterwards used by the Mahrattas, as the lodgment of their riches, and also as a retreat for the more defenceless inhabitants of Puna, and other open towns, in time of potent invasions.

'The river continues descending to the east. In lat. 17° is Meritch, a strong fortress, with a Jaghirdar territory conquered from its owner by Hyder. In lat. 16° 45′, a small river discharges itself into the Crisna from the north. It would not be worth mentioning, but that Pannela, a fortress of vast strength, was made by Sumbuji, the profligate son of Sivaji, his residence just before his surprisal in 1689, betrayed by Cablis Khan, the vile instrument of his pleasures, corrupted by Aurengzebe. His extravagant love of women brought on him ruin. Informed by Cablis that a Hindu of rank and great beauty was on her road to be delivered by the parents to her husband, according to the custom of the Hindus, he instantly put himself at the head of a small body of horse to carry off the prize, and ordered Cablis to follow at a distance for his protection, in case of accidents in that hostile time. The traitor had given notice to Aurengzebe of this expedition, who, sending a body of cavalry, surprised Sambaji just as he had dispersed the nuptial procession.'—

'Into the north side of the Crisna, in lat. 16° 20′ falls the great river Bima, after a course of 350 miles. It rises at the head of the western Ghauts, parallel to Chaul in the Concan, and not above 50 miles from the sea. It descends rapidly towards the south-east. In lat. 17° 40′ it receives a small river from the west, on the southern banks of which stands Vijapur, the capital of the famous kingdom of the same name, now possessed by the Mahrattas, but once governed by its own monarchs, till conquered by Aurengzebe in 1686. It was of great extent, and reached to the western sea, where it possessed the ports of Dabul, Vingorla, and Carapatan.

'The capital, Vijapur, is some leagues in circuit, seated in a fine but naked country, well watered. It makes a singular appearance

from an adjacent eminence, filled with numbers of small domes, and one of a majestic size. It was once a city of great splendor, and filled with palaces, mosques, mausoleums, and public and private buildings of great magnificence; many of them are fallen to ruin, and give melancholy proofs of its former splendor. I shall not attempt to detail them. The palaces of the Kings, and accommodations for their attendants, were within a vast fort, surrounded with a ditch a hundred yards wide; the depth appeared to be great, but is now filled with rubbish: within the fort is the citadel. Tavernier says, that the great ditch was filled with crocodiles, by way of garrison, to prevent all access by water. Lieutenant Moor has his doubts about this, imagining that there never was any water in this foss. That such garrisons have existed I doubt not. I have read in Purchas, that in Pegu, the fosses of fortified places were stocked with those tremendous animals, not only to keep out enemies, but to prevent desertion. This practice has certainly been of great antiquity in some parts of India: Pliny mentions it as used in a fair city of the Horatæ, a people I cannot trace.

'The Crisna, above and below its conflux with the Bima, is fordable; and a few miles below its channel is 600 yards wide, made horrid with the number and rudeness of the variously formed rocks, which are never covered but in the rainy season.

'The Tungbuddra is another vast branch of the Crisna. It falls into it, in lat. 16° 25′, and originates extremely south, from a doubtful fountain. Towards its lower part it divides into three or four small branches, which rise remote from each other; the most southern is the Curga Naïr's country; the most northern from the head of the Ghauts opposite to Onor, and scarcely 20 miles from the sea. What must give this river great celebrity, is its having had on its banks in lat. 15° 22′ the splendid city of Vijanagar. Ferishta says, that it was founded in 1344 by Belaldeo, king of the Carnatic, which in those days included the whole peninsula. It was visited by Cæsar Frederick, a Venetian traveller, in 1565, and found deserted and ruinous, having been sacked by four confederated Mahommedan princes two years before, on which its monarch had retired to Penuconda. Frederick says that its circumference was 24 miles. Mr. Rennell has given us a view of its present state from Lieutenant Emitt, who visited it in 1792.'—

'The ruins of Vijanagar are in the little Sircar of Anagundi, which does not extend above 20 miles around this vast city. It is very singular that that little Sircar is now possessed by a lineal descendant of Rama Rajah, the last great monarch of Vijanagar, and its attendant nations Canarine and Malabar, united 700 years before under the rule of Crisna Deva. Tippu wished to reserve this little tract to himself, for the satisfaction of generously restoring to the descendant the small relique of the great empire of his ancestors. He is denied the title of Rajah, instead of which he has the diminutive Raïl bestowed on him; this suitable to his revenues, which do not exceed two lacs of rupees, or 25,000 *per ann.* with the empty regality of a mint at Anagundi.'

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As the Crisna offers nothing remarkable in the remainder of its course, we will change the scene; and, transporting our readers over the mountains of Budtan, to the capital of Tibet, will descend again with the Brahmaputro, till it reaches the province of Bengal.

'Cus Bahar is on the northern frontier of Bengal, where we had a factory for the sake of the commerce with Assam, and other adjacent countries. This town was attacked by the Budtias, who had never met in the plains any other than the timid Hindus flying naked before them, and who saw, for the first time, a body of men uniformly clothed and accoutred, moving in regular order, and led on by men of complexion, dress, and features such as they never beheld before; and then the management of the artillery, and incessant fire of the musquetry, was beyond any idea which they could have conceived of it. On the other hand, our people found themselves engaged with a race of men unlike all their former opponents in India, uncouth in their appearance, and fierce in their assault, wrapped in furs, and armed with bows and arrows, and other weapons peculiar to them.

'Immediately beyond Cus Bahar arises the great range of mountains which give admittance through their passes into Budtan, each of which, difficult as they are, is fortified. The ridge rises here a mile and a half in perpendicular height, and affords a most astonishing view over the plains of Hindustan almost immediately subjacent, and stretched beneath like a boundless ocean when it first bursts on the eye of the traveller; yet behind these rise other ranges of far superior heights, which soar with a majesty past the power of the pen to describe, and shew their snowy tops to the melting inhabitants of Bengal 150 miles distant.

'In the gorges of this first range, not far to the north-west of Cus Bahar, stands, on a lofty and rude pyramidal mountain, with a flatted head, the fort of Delamcotta. It is impossible for imagination to invent a ruder situation; the surrounding mountains are equally horrible, and approximate so near as to form only darksome chasms of immense depth. On the sides are narrow roads impending over dreadful precipices.'—

'On the borders of Budtan, after crossing the mountains from Cus Bahar, is the town of Buxaduar, seated on the flat top of a wooded hill, surrounded with others of conoid forms, covered with trees to their summits.'—

'At Chuca, about 38 miles farther to the north, is a specimen of a bridge, common in this country, but to others of a surprising structure, composed of iron chains, covered with planks, and stretched from precipice to precipice across the river. I have given a plate of this, done by a painter attendant on the embassy. Thirty-two miles farther north stand the castle and town of Punaca; a plate is also given of this. It represents the face of the country, and the style of building, and a view of the exalted mountains of snow, soaring above others, which any where else would astonish the traveller with their height.'—

'Forty-two miles north of Punaca is Tasisudon, the capital of Budtan. Between this city and Paradrong is the great Emodal chain, capt eternally with snow, the same which overtops the other snow-capt chains, and shews itself to the distant inhabitants of Bengal. This range is also the boundary between Budtan and the Lama's country, or Great Tibet. From this limit to the great river Brahmaputro, is in many places 150 miles in extent. The river Tista rises not far from the former, and hastens south through Budtan and Bengal, till it is lost near Dacca, in Bengal.

'This country rises into mountains of prodigious height. The summits eternally covered with snow, the sides with forests of stately trees of various kinds; some, such as pines, aspens, birch, cypress and yew, holly and elder; ash is uncommon, oaks have not yet been discovered in Budtan; firs, and others known in Europe, others again peculiar to this country and climate. Many of these forests are useless to mankind, being placed amidst rocks inaccessible. At their base, the vallies and sides are cultivated, and are productive of wheat, barley, and even rice. In the depth of the vallies, rush numbers of furious torrents, which, increasing in their course, and at length gaining the plains, are lost in the rivers of Bengal.

'Mr. Saunders tells us that at Buxaduar many of the plants of Bengal require culture, yet many of the plants of the torrid zone grow there in the wild jungles; for example, a species of plantain, (Musa,) with a broad leaf, useful for thatching; the Bengal kind will not thrive here. Twenty miles farther south are found two species of Cassia. In respect to European fruits, here are good orchards of peaches, apricots, apples, and pears; walnuts are not unfrequent, strawberries and bilberries are common, the first excellent. The arbutus uva ursi, common to Scotland and the Alps, is found here. The number of plants which grow under the name of weeds, common to this country, England, and other parts of Europe, is very great.

'Mr. Saunders speaks of a whitish quartz as used in the porcelain business; in parts, he met with a flinty spar of a sort of granite, and a pure limestone. On the front of a certain mountain, he was struck with the appearance of six or seven angulated semi pillars of great circumference, and some hundreds of feet high, projecting over a great cataract. Gold is found in form of dust, and in large quantities, and often in large lumps, and veins adhering to flint and quartz. There also are lead, iron, and copper.

'Rock salt and tincal, in vast quantities, from the bottom of a lake in Tibet. This last is got in great masses, but broken to pieces for the conveniency of carriage; it seems inexhaustible; the lake is 20 miles in circumference, seated bleakly, and frozen during a great part of the year. In Tibet it is used to solder with, and promote the fusion of gold and silver. Tincal is now discovered to be the substance which produces the salt Borax. It is of great use in the making of glass, and making artificial gems; it is employed also as a flux, and by dyers to give a gloss to silks.'—

'I now arrive at the banks of the Brahmaputro, (Mr. P. calls it *Burrampooter*,) and cross into the sacred land of Tibet.—It is named

named Sampu by the Tibetians, and rises in about lat. 32° 30′ north, east longitude from Greenwich 82° 40′, in the kingdom of Tibet, or country of the grand Lama, and on the opposite side of the same mountains which give rise to the Ganges. It takes an eastern direction for a considerable way, keeps confined in the vale of Tibet, between the vast chain of mountains, probably with a most rapid course. The cold of Tibet is very great, occasioned by the vast tract of snowy regions, which the northern wind passes over in its course *. Mr. Bogle found at Chanmaning, where he wintered, the thermometer in his chamber 29° below the freezing point, notwithstanding the lat. was in 31° 39′, or 8 degrees to the north of the burning Calcutta. In April, all the standing waters were frozen. In Tibet, the mountains are quite naked, and bear a very different aspect from those of Budtan. I may here observe that the inhabitants of Tibet, Budtan, Asam, and Tripura, are not less subject to goitres, or wens, than the inhabitants of the European Alps.

'The first city near its banks is Chanmaning; the next is Lassa, the capital of the kingdom, in lat. 30° 30′. The river washes the walls †, yet I do not find that Mr. Bogle makes any mention of its being navigable, notwithstanding it is above 600 miles from its source. I have been informed that in part of its course along Tibet, it is as broad as the Thames at Westminster. The city of Lassa is well built with stone, and has considerable commerce with China, chiefly by means of caravans; it also sends caravans to Senginlinski, in the Russian dominions in Siberia, by which it receives numbers of the manufactures of Europe. It is very populous, and of a considerable size; is the residence of the chief officers of government, and of the two Chinese mandarins and their suite. These mandarins have actually a garrison of 1000 men in the city. It is also inhabited by Chinese and Casmirian merchants and artificers, and is the daily resort of numberless traders, who come in occasional parties, or in stated caravans.

'Besides musk, the fine wool, and cow-tails, Tibet produces great quantities of gold, either washed from the sands of the Sampu, or the lesser rivers, or dug out of the mines. The Lama never uses any in his mint, but it is exchanged for the articles of commerce, particularly with the Chinese. Rhubarb is also an article of commerce. I may mention that Tibet supplies India with great variety of fine falcons. It is also famed for its breed of great dogs, which Marco Paolo says are almost as tall as an ass, and are much used in the chace of wild beasts.

'Beyond the river, opposite to Lassa, and immediately beyond the chain of mountains called Cambala, adjacent to the Sampu, is the vast lake of Palta, about 150 miles in circuit, so filled with a single island as to leave around it only 6 or 8 miles of water. The Lama resides about 7 miles from Lassa, at Putala, a vast palace, on a mountain near the banks of the Sampu. He is supposed to be immortal; it is true that he appears to die, but it is only the act of his removing

* Is it not principally occasioned by the elevation from the sea? *Rev.*

† Major Rennell places the city 24 miles north of the river. *Rev.*

into another body, that of an infant, who is discovered by the priests by a certain token known only to themselves, and is called the Dallai Lama.'—

'The women in Tibet are allowed a plurality of husbands. A set of brethren are allowed one wife in common, and they live in the utmost harmony together. True it is that a modest and virtuous lady, wife to half a dozen of the Taysu Lama's nephews, complained to the uncle that the two youngest did not contribute that share of love and benevolence to the common stock, which duty and religion required.'—

'The religion has in a few instances a resemblance to the Hindu; they have a great veneration for the cow, but confine it to the silk-tailed species of their own country; they highly respect the waters of the Ganges. One of the first effects of the peace between us and the Lama, was the obtaining leave to build a place of worship on the banks of the sacred river.

'The Dallai Lama is the great object of veneration of all the heathen Tartars, who every year come up from the most distant parts, and make rich offerings at his shrine. Even the Emperor of China, a Mantchew Tartar, acknowleges him in a religious capacity, and entertains, at vast expence, at his palace at Pekin, an inferior Lama, deputed as his nuncio from Tibet. Numbers of Suniases, or Hindu pilgrims, visit Tibet as a holy place, and the Lama constantly entertained a body of 2 or 300 in his pay. The Tibetians are of a smaller size, and less robust make, than their southern neighbours the Budtias; their features are Tartarian; their dress like the Chinese, with a conical hat, light boots, and tunic of brocaded silk.'—

'After a long winding course through Tibet, the Sampu enters Asam, where it acquires the name of Brahmaputro. The capital of this country, Ghirgong, is in lat. 26° 30′. It has four gates, and the city is encompassed with a bound hedge of bamboos. The Rajah's palace is surrounded by a causey, planted on each side with a close hedge of bamboos, which serves instead of a wall. On the outside there is a ditch, which is always full of water. The Rajah's seat is adorned with lattice work and carving. Within and without have been placed plates of brass, so well polished, that when the rays of the sun strike upon them they shine like mirrors. It is an ascertained fact, that 3000 carpenters and 12,000 labourers were constantly employed in this work during two years before it was finished.'—

'The Asiatic Researches speak much of the wealth of Asam, and of the plenty and excellency of its natural productions, and that it abounds in all metals but tin. Gold is produced in every part of the country by washing the sand of the rivers, and is one of the sources of revenue: 12,000, some say, 20,000 people, are employed in that work, each of whom has from the Rajah a certain wages. Its gum lac is excellent, and it is very productive of silk.

'Among the fruits which this country produces are mangoes, plantains, jacks, oranges, citrons, limes, pine apples, and puniala, a species of tamarind, which has such an excellent flavor, that every person who tastes it prefers it to the plumb. There are also

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coco-nut trees, pepper vines, and the areca trees. The sugar cane excels in softness and sweetness, and is of three colours, red, black, and white. There is ginger free from fibres, and betel vines. The strength of vegetation and fertility of the soil are such, that whatever seed is sown or slips planted they always thrive. The environs of Ghirgong furnish small apricots, yams, and pomgranates; but as these articles are wild, and not assisted by cultivation and engraftment, they are very indifferent. The principal crop in this country consists in rice and lentiles. Wheat and barley are never sown; lignum aloes is also a production of this country. The silks are excellent, and resemble those of China, but they manufacture very few more than are required for use. They are successful in embroidering with flowers, and in weaving velvet.—One of their great forests is inhabited by abundance of elephants: 6 or 700 may be taken in a year, but they are neglected by the natives, who have neither horses, camels, nor asses, such as are brought from other countries.

'The people of Asam are a base unprincipled nation, and have no fixed religion. They follow no rule but that of their own inclination, and make their own vicious minds the test of the propriety of their actions. They do not adopt any mode of worship practised either by heathens or Mahommedans, nor do they concur with any of the known sects which prevail among mankind; unlike the pagans of Hindustan, they do not reject victuals which have been dressed by Moslems, and they abstain from no flesh except human. They even eat animals that have died a natural death.'

In justice to the people of Asam, we must remark that the above account, extracted from the memoirs of Mir Jumla's expedition into that country, was composed by a rigid Mahommedan, at the court of that fanatical tyrant Aurengzebe. The author and his master saw, in the Asamese, only idolaters; and, in idolaters, the meanest of mankind. Their diet, though less restricted than that of the Hindus of Bengal, is by no means promiscuous; and their religion does not in any way differ from that of Hindustan,—as might easily be proved by their coins, inscribed with the names of Hindu deities.

In the following passage, Mr. Pennant adverts to the surprising phænomenon of fish being found in places which were before dry. We apprehend that his solution will not prove satisfactory. It is no uncommon thing for frogs and toads to be found alive on the flat tops of the highest houses, the day after a violent fall of rain, in tropical climates. These, it must be admitted, can only be conveyed by the rain to such situations, in whatever state of their existence it may be effected.

'The phænomenon of small fish appearing in the rainy season, in places before dry, is as true as it is surprising. The natives begin to fish for them the tenth day after the first rains, and they make a common dish at the tables. Many are the modes of accounting for this annual appearance. It has been suggested that the spawn may have

have been brought by the water fowl, or may have been caught up by the typhons, which rage at the commencement of the wet season, and be conveyed in the torrents of rain. I can only give an explanation much less violent; that these fishes never had been any where but near the places where they are found. That they have had a pre-existent state, and began life in the form of frogs: that it had been the Rana paradoxa of Gm. Lin III. p. 10. 55. Their trransformation is certainly wonderful.'

The following desultory observations are submitted for consideration, in case of a second edition of this work, which will probably become a popular one. 'The empire of Candahar was founded by Ahmed Abdalli, an Afgan prince, compelled by Culi Khan to join his army in 1739.' This mistake is copied from Major Rennell. Ahmed Shah was certainly of the tribe of Abdalli, but so obscure was his origin, that Mr. Forster could procure no account of it, even on the spot. All his Persian biographers speak of him as rising progressively in the service of Nadir Shah. The bill negotiated by Mr. Forster at Cabul was drawn at Casmir, not at Calicut.—'Not far from Nagarcut is Jelamuki, a temple built over the subterraneous fire. Possibly the country may be inhabited by the Ghebres, or worshippers of fire, or Persis, descendants of those who had escaped the horrid massacre of Timur Beg.' Did Mr. Pennant forget that this element is considered as the purest symbol of the Divinity by the Hindus; who undertake pilgrimages as far as Bacu, on the western coasts of the Caspian, to perform their mystic rites to what they term the uncreated fire? The Nubian Geographer mentions that the mountains about Cabul abounded with Neregil, which our author conjectures to be the Nellila Phylanthusemblica. The tree here meant, however, is the coco-nut tree; and even these have disappeared.—'Bokhara (says Mr. P.) seems to have been of more modern date: it is not mentioned, as far as I recollect, before the days of the Nubian Geographer, who wrote some time prior to the year 1151, but it appears to have been in the next century a most flourishing place.' Bokhara is much more antient than Samarcand; Khondemir says that it was the capital of Oguz Khan, whom the Mahommedan Tartars make the eighth in descent from Japhet:—but, let this be as it may, it was the capital of the Samanian empire founded in 909, on the ruins of which rose that of Gizna.—'The Ghiznian empire continued 207 years, Mahmûd began his reign in 977, and it became extinct in 1184.' Sultan Mahmûd ascended the throne in 997; and the dynasty, according to Khondemir, reigned only 155 years.

Of the magnificent temple demolished by Mahmûd, we find the following account: 'The famous pagoda Jumnat stood close

close to Puttan, on the western side of Guzerat. It was destroyed in 1022 by the bigotted Mahmûd. The Hindus believed that the souls of the departed went to this place, to be transferred into other bodies, human or animal, according to their deserts. The riches in gems, gold, &c. would be incredible, did we not know the power of superstition in those remote and unenlightened times.' We know not whence Mr. P. derived the above account, but the temple of which he speaks was dedicated to the moon, Somanat, and is so called by all the writers whom we have consulted. The legend is that Crisna, (the shepherd God,) sporting with the Gopia on a clear summer evening, amid the beautiful woods bordering the river, was so struck with the romantic scenery, and the serene skies enlightened by the moon, that he consecrated a temple to the Deus Lunus in the enchanting region in which he seemed to preside. It has nothing to do with Yama, the Hindu Minos; who is never called Yamanat.—Another mistake relative to Sultan Mahmûd occurs in the author's account of Bengal: 'About 25 miles below Rajmal, stood a city of great antiquity, the Gangia Regia of Ptolemy. Ferishta gives it a very high origin indeed; telling us that it was rebuilt and beautified 732 years before Christ, by Shincul. The name was then Gaur and Lucnauti. It was taken in 1009 by Mahmûd I., and the king made prisoner. Like Hannibal, he kept poison concealed in his ring, which he took, and put an end to his life. His country was annexed to the dominion of Gazna.' Here Mr. Pennant has mistaken the kingdom of Ghaur in Afganistan, for Gaur the capital of Bengal. Mahommed ben Suri was king of the former, and ended his days as above related in 1009. Mahmûd never approached nearer to Bengal, than Canoja. "Bengal (says Ferishta) was added to the empire by Humaiun, in 1538; he took its antient capital Gaur, and changed its name to Gennetabad, or the heavenly city." 'Ferishta should have said that it was first conquered by the Emperor Altumsh, who began his reign in 1210, but it appears to have recovered its independency.' This is a mistake into which our author has been led by Col. Dow. Ferishta, in his history of the kings of Bengal, (a work not yet translated,) says that it was first conquered by Bukhtyar Khelji, in the reign of Cuttubeddin Ibec: which is confirmed by Abulfazil; who adds that Nuddea was the antient capital, and that the seat of government was removed to Gaur by Bukhtyar.—'The Delta of the Indus (says Mr. Pennant) is called by the Indians, Pattala, which signifies the same thing.' Dr. Vincent * justly remarks that this word signifies hell, and

* In his Voyage of Nearchus. See Rev. xxvi. N. S. p. 254.

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is not unsuitably applied to an arid tract, where the heats are insupportable. Laribunder is not placed on the banks of the Richel by Major Rennell.—'Carpasus (says Mr. Pennant) is a word I cannot translate, but it appears to have been some vegetable that was used in making the Indian webs.' Carpasus was that species of the cotton plant which was named in India, Capas.

'Nardos Gapanica, or Nardus, from a certain part of India called Gapana, is another article of commerce. The Nardus was in high repute in former times, but now is out of fashion. It was much used in form of a pomatum, with which the Romans perfumed their hair. Old Gerard speaks of its medical virtues in his days. I cannot ascertain the plant.' Sir Wm. Jones has ascertained it to our entire conviction, and describes it in the Linnean style, *Valeriana Jatamansi floribus triandris foliis cordatis quaternis, radicalibus petiolatis.*—Mr. P. mistakes when he says that the Areca, or Beetle-nut tree, is not found in Bengal; they are very numerous in all parts of it.—'The inhabitants of Ceylon are the Cingalese; these are aboriginal, and differ totally in language from the people of Malabar, or any other neighbouring nations. Their religion is derived from Budda, a proselyte of the great Indian Foe: his doctrine spread over Jahan and Siam as well as that of Foe.' It is not easy to involve so many misapprehensions in so few words, as Dr. Thunberg has in the foregoing passage. Was he acquainted with the language of Malabar, and other neighbouring nations? It is necessary only to examine a map of Ceylon, in order to perceive that the cities obtained their names from a people speaking a dialect of the Sanscrit. The great Indian Foe is a personage of whom India never heard: but his supposed proselyte has made some noise. Sir Wm. Jones justly observes that the Budda of the Hindus is unquestionably the Foe of China.

Our limits will not admit of our pursuing the subject farther, but we have probably said sufficient to evince the necessity of careful revision:—the typography is likewise very incorrect. We must also state our concern at having discovered sentiments which we cannot pass without reprehension, in a work possessing so many popular attractions. 'Every good man (says Mr. P.) naturally wishes to hear that the end of a villain is suitable to his deeds. How are we disappointed when Mr. Scott tells us that he (Somroo) was not impaled!' Every good man naturally wishes that the end of a villain may be repentance, and amendment of life. Did our author forget that example, not revenge, is the object of legal punishment? But what shall we say to the following passage? 'Omichund played the part

of a double traitor; neither side would have censured his fate, and the secret might have remained for ever secure. He died eventually of a broken heart; had his death been anticipated a few days by any other means, where would have been the crime? We were not always so delicate! Political necessity has made many an honest man a knave!'—In treating of the insects of Bengal, (a curious place for such observations!) we find this mysterious paragraph; 'Our Cootes, our Lawrences, our Fordes, fought our detailed battles, and at length cleared the plains of Hindustan from a brave and able foe. The genius of the French sunk under the superior guardian of the British. Clive, by various great actions, decided the fate; some struggles between Nabob and Nabob kept for a while the flame of war alive. A short anarchy succeeded, and brought a temporary shame on the British name; inquiry! fictitious? was instituted:

"A gude *Scot* once grumbled
"*Brutum fulmen*, meant only to scare when it *rumbold*."

Of such insinuations, we cannot approve.——The condition of the peasantry of Bengal is described as in the highest degree wretched, and exposed to the oppression of tyrannical landholders; yet the character of Mr. Hastings receives the highest encomiums. We are at a loss to reconcile the consistency of these representations, or to discover for what end government was instituted, unless to protect each class of the community from the the injustice of the others. This reasoning applies solely to Mr. Pennant's statement; for we have the satisfaction of knowing that the peasantry of Bengal enjoy a greater share of comparative happiness, than usually falls to the lot of that most valuable, most numerous, and most neglected description of people. The worst evil of which they have to complain arises from the high price of salt; a growing calamity, which eminently deserves the interposition of the legislature. Of what importance is it to limit the revenue derived from land, while the necessaries of life may be raised to an indefinite amount, by an established monopoly?

*** Since the foregoing article was written, the Newspapers have informed us of the death of Mr. Pennant; by which event, the literary public have sustained a very considerable loss.—As a well-informed and entertaining writer, he has scarcely left his equal.—He once told us himself that he was dead*, and we found ourselves justified in disbelieving him: we are now told by others that he is deceased, and we fear that we have no right to question the information: but, as he himself then said "RESURGAM," so may others now say, "HE SHALL RISE AGAIN."

* See the account of his own life, Rev. vol. xiii. N. S. p. 56.

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ART. II. Captain Vancouver's *Voyage of Discovery round the World, Vol. III.*

[*Article concluded from p.* 160.]

ABOUT a week after the arrival of our voyagers at Owhyhee, a meeting of Chiefs, summoned from the different districts, (by Captain V. called the grand council of the island,) took place, to deliberate on 'its cession to the crown of Great Britain, which was unanimously desired.' This is the first mention of the subject that we find; and nothing farther relative to it occurs, till above a month afterward, when it is thus resumed:

'The domestic affairs of Tamaahmaah being settled, his mind was more at liberty for political considerations; and the cession of Owhyhee to his Britannic Majesty became now an object of his serious concern. On my former visit it had been frequently mentioned, but was at that time disapproved of by some of the leading chiefs; who contended, that they ought not voluntarily to surrender themselves, or acknowledge their subjection, to the government of a superior foreign power, without being completely convinced that such power would protect them against the ambitious view of remote or neighbouring enemies. During our absence this subject had been most seriously discussed by the chiefs in the island, and the result of their deliberations was, an unanimous opinion, that, in order to obtain the protection required, it was important that Tamaahmaah should make the surrender in question, formally to me, on the part of his Majesty; that he should acknowledge himself and people as subjects of the British crown; and that they should supplicate that power to guard them against any future molestation.'—

'Under a conviction of the importance of these islands to Great Britain, in the event of an extension of her commerce over the pacific ocean, and in return for the essential services we had derived from the excellent productions of the country, and the ready assistance of its inhabitants, I lost no opportunity for encouraging their friendly dispositions towards us, notwithstanding the disappointments they had met from the traders, for whose conduct I could invent no apology; endeavouring to impress them with the idea, that, on submitting to the authority and protection of a superior power, they might reasonably expect they would in future be less liable to such abuses.'—

'These people had already become acquainted with four commercial nations of the civilized world; and had been given to understand, that several others similar in knowledge and in power existed in those distant regions from whence these had come. This information, as may reasonably be expected, suggested the apprehension, that the period was not very remote when they might be compelled to submit to the authority of some one of these superior powers; and under that impression, they did not hesitate to prefer the English, who had been their first and constant visitors.'

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'On a due consideration of all the circumstances,' says Captain Vancouver, 'I felt it to be an incumbent duty to accept, for the crown of Great Britain, the proffered cession; and I had therefore stipulated that it should be made in the most unequivocal and public manner.' For this purpose, on the 25th of February, *Tamaahmaah*, with the Chiefs of many of the districts of the island, assembled on board the Discovery; all the officers of the two ships being present:

'*Tamaahmaah* opened the business in a speech, which he delivered with great moderation and equal firmness. He explained the reasons (already stated) that had induced him to offer the island to the protection of Great Britain; and recounted the numerous advantages that himself, the Chiefs, and the people, were likely to derive by the surrender they were about to make. He enumerated the several nations that since Captain Cook's discovery of these islands had occasionally resorted hither, each of which was too powerful for them to resist; and as these visitors had come more frequently to their shores, and their numbers seemed to increase, he considered that the inhabitants would be liable to more ill treatment, and still greater impositions than they had yet endured, unless they could be protected against such wrongs by some one of the civilized powers with whose people they had become acquainted; that at present they were completely independent, under no sort of engagement whatever, and were to make choice of that state which in their opinion was most likely by its attention to their security and interests, to answer the purpose for which the proposed surrender was intended. For his own part he did not hesitate to declare the preference he entertained for the king of Great Britain, to whom he was ready to acknowledge his submission; and demanded to know who had any objection to follow his example.'

Several other Chiefs likewise spoke. In all their speeches,

'Their religion, government, and domestic economy were noticed, and it was clearly understood that no interference was to take place in any of these respects. That the Chiefs and priests were to officiate with the same authority as before, and that no alteration in these particulars was in any degree thought of or intended.'—'These preliminaries being fully discussed, the king repeated his former proposition, which was now unanimously approved, and the whole party declared their assent by saying that they were no longer *Tanato no Owhyhee*, but *Tanato no Brittannee*. (That they were no longer men of Owhyhee, but men of Britain.) This being made known to the people in the surrounding canoes, the same expressions were repeated by them.'

Some officers were then sent on shore, who 'displayed the British colours, and took possession of the island in the name of his Majesty.' The ships now fired a salute, and the following inscription on copper was deposited at the royal residence:

"On the 25th of February, 1794, *Tamaahmaah*, king of Owhyhee, in council with the principal Chiefs of the island assembled on board his

his Britannic Majesty's sloop Discovery in Karakakooa bay, and in the presence of George Vancouver, commander of the said sloop; Lieutenant Peter Puget commander of his said Majesty's armed tender the Chatham; and the other officers of the Discovery; after due consideration, unanimously ceded the said island of Owhyhee to his Britannic Majesty, and acknowledged themselves to be subjects of Great Britain."

How far Captain Vancouver was authorised or empowered, by circumstances, to receive these islanders into the protection of the British empire, or what obligations his having so done has imposed on this country, does not appear to us. We have related the business at some length, and shall leave the reader to make his own comment. There are some circumstances in the narrative which ought to have been omitted, and which for that reason we forbear to mention.

Some Englishmen in the service of *Tamaahmaah* had undertaken to build a schooner for him, and had made some progress in their work, when Captain Vancouver arrived; with whose assistance the vessel was nearly completed before he left the island. Young and Davis, whom we formerly mentioned, continued high in the king's favour; and, which is yet more to their credit, they continued to merit it.

On the 14th of March, the ships left the Sandwich Islands, and stood to the northward towards the American coast, for the third season. Early in April they entered Cook's Inlet; and by the middle of May their examination of it was finished. No branch, nor river, communicating with this inlet, which in appearance promised so fair, was found to penetrate more than a very few miles beyond what, on the first entrance, had been discovered by Captain Cook. Several Russian settlements were seen, and some of them were visited. In a conversation with the Russians, Captain Vancouver observes, 'they seemed to use every endeavour to impress us with an idea, that the American continent, and adjacent islands, as far to the eastward as the meridian of Kaye's island, belonged exclusively to the Russian empire.'—As the ships quitted the inlet, they met a party of Indians in 200 canoes, each canoe carrying two persons, 'almost all men grown;' so that this must have been one of the most considerable tribes of Americans that they had seen. The natives in the neighbourhood of the Russian settlements were remarkably civil; and the behaviour of the Russians to the natives is represented as mild and friendly.

From Cook's Inlet they continued their survey, examining Prince William's Sound; the different branches of which were all found to terminate at no great distance from the Sound.

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At Port Etches, near the eastern point of the entrance into Prince William's Sound, was a settlement, consisting of 100 Russians. This was said to be their easternmost establishment, 'but their boats make excursions along the exterior coast as far as Cape Suckling, and their galliots much farther.' A party of ten Russians, with not fewer than 900 of the natives from Cook's Inlet and its neighbourhood, were met by the ships at Port Mulgrave, a distance of more than 100 leagues. Their object was to collect skins. They had very few articles of trade except beads; and it is not very probable that so large a party should confine themselves to such means only as traffic afforded, for which they were so indifferently provided, in order to procure what they wanted. The Russians, it appears, had, a short time before, been involved in a serious dispute with the Eastern natives: but with the circumstances our people did not become acquainted. When the ships arrived near Cross Sound, the natives who visited them were very differently disposed towards strangers, from those who had been seen in Cook's Inlet, and Prince William's Sound. From a canoe which came off, no one would venture into the ships without a hostage being first sent into the canoe.

In the survey of the coast between Cape Fairweather, in latitude 58° 51′ North, and Cape Spencer in lat. 58° 13′ North, we do not find the *Port des Français* of M. de la Pérouse, which is by him placed in 58° 37′ N. latitude. The entrance into Port des Français is less than half a league in width: but the track of Captain Vancouver along this part of the coast is drawn at not more than two leagues distance from the land. An opening is mentioned in the narrative. 'The favorable breeze continuing with delightfully pleasant weather, and having the advantage of day-light, nearly the whole of the twenty four hours, we were enabled to keep within five miles of the coast, which was now again well wooded, and from cape Fairweather took a direction S. 43 E.; it is steep and intire, with the exception of one small opening, that had the appearance of being likely to afford shelter for shipping; but it is completely bounded at a little distance by steep compact mountains, which are a continuation of the same undivided range stretching to the eastward.'

In the chart, likewise, an unexamined opening is placed in 58° 43′ N. latitude. We cannot be certain that this opening seen by Captain Vancouver was not Port des Français: but there can be no doubt entertained of the correctness of M. de la Pérouse's latitude, as he was a considerable time in that port, and had set up an observatory on shore.

On the examination of an arm of the sea within Cross sound, Captain Vancouver has made the following remark:

'The upper part of this arm, which after the place of my nativity, the town of Lynn in Norfolk, obtained the name of LYNN CANAL, approaches nearer to those interior waters of the continent, which are said to be known to the traders and travellers from the opposite side of America, than we had found the waters of the north Pacific penetrate in any former instance. This approximation is towards the south-west side of the Arathapescow lake, as laid down in Captain Cook's chart, from which its distance is about three hundred and twenty geographical miles; but from the close connection and continuation of the lofty snowy barrier, so frequently before adverted to, trending south-eastward, and nearly parallel to the direction of the continental shore, little probability can remain of there being any navigable communication, even for canoes between such waters and the north Pacific ocean, without the interruption of falls, cataracts, and various other impediments.'

The navigable extent of this canal is described to terminate in 59° 12′ N. latitude, and in 224° 33′ E. longitude, where a shoal extended across; the arm being there about a mile in breadth:

'The water was found to be perfectly fresh. Along the edge of this shoal the boats passed from side to side in six feet water, and beyond it, the head of the arm extended about half a league, where a small opening in the land was seen, about the fourth of a mile wide, leading to the north-westward, from whence a rapid stream of fresh water rushed over the shoal; but this, to all appearance, was bounded at no great distance by a continuation of the same lofty ridge of snowy mountains so repeatedly mentioned, as stretching eastwardly from mount Fairweather, and which, in every point of view they had hitherto been seen, appeared to be a firm and close-connected range of stupendous mountains, for ever doomed to support a burthen of undissolving ice and snow.'

This branch of the canal is left in the chart (as it is described in the narrative) unterminated beyond the shoal, and probably is navigable for boats or small craft at a considerable distance inland, beyond what was seen. The boat-excursions on this part of the coast were attended with much risk from the natives, who were numerous, well armed, and not well disposed. The surveying parties, more than once, were extricated from very dangerous situations by the prompt exertions of the officers to whom the performance of those services was intrusted. On one of these occasions, an awning being spred appears to have been of great use; the Indians being prevented by it, in an attempt which they made to board the boat. The Chief of a large party of Indians, who were met in Lynn Canal, makes a very different appearance from any other that we find mentioned in the course of the voyage.

'This Chief Mr. Whidbey represented as a tall thin elderly man. He was dressed in a much more superb style than any chief we had hitherto

hitherto seen on this coast, and he supported a degree of state consequence, and personal dignity, unusual to be found amongst the chiefs of North-West America. His external robe was a very fine large garment, that reached from his neck down to his heels, made of wool from the mountain sheep, neatly variegated with several colours, and edged, and otherwise decorated with little tufts, or frogs of woollen yarn, dyed of various colours. His head-dress was made of wood, much resembling in its shape, a crown, adorned with bright copper and brass plates, from whence hung a number of tails or streamers, composed of wool and fur wrought together, dyed of various colours, and each terminating by a whole ermine skin. The whole exhibited a magnificent appearance, and indicated a taste for dress and ornament, that we had not supposed the natives of these regions to possess.'

On the 19th of August, the voyagers had completed their survey from Cook's Inlet, to the part of the coast at which they broke off in the preceding year. To the harbour in which the ships lay at this time, was given the name of Port Conclusion. It is observable of this season, that the survey was commenced more early, and that a greater range of coast was examined, than in either of the former years.

'I have considered it essential (says Captain Vancouver) to the illustration of our survey, to state very exactly not only the track of the vessels when navigating these regions, but likewise those of the boats when so employed, as well when I was present myself, as when they were conducted by Mr. Whidbey or Mr. Johnstone, on whom the execution of that laborious and dangerous service principally fell, and to whom I feel myself indebted for the zeal with which they engaged in it on all occasions. The perusal of these parts of our voyage to persons not particularly interested, I am conscious, will afford but little entertainment; yet I have been induced to give a detailed account, instead of an abstract, of our proceedings, for the purpose of illustrating the charts accompanying this journal; of shewing the manner in which our time day by day had been employed; and, for the additional purpose, of making the history of our transactions on the north-west coast of America, *as conclusive as possible*, against all speculative opinions respecting the existence of a *hyperborean or mediterranean ocean* within the limits of our survey.'

For the present, we shall defer our opinion on this subject, that we may not interrupt the narrative.

The ships now steered for Nootka Sound, where they found a new governor, Sen. Alava; who informed them "that his appointment to this government had taken place, for the particular purpose of finishing the pending negociation, respecting the cession of these territories."——'The present governor, however, was still unprovided with the necessary credentials: but on his departure from St. Blas, in June, these documents were hourly expected, and a vessel was kept waiting there in

readiness to be dispatched, provided they arrived in time for her reaching Nootka before the 19th of October.' No credentials appeared during Captain Vancouver's stay at Nootka: but, while the ships were at Monterrey, to which place they went from Nootka, dispatches arrived from the Viceroy of Mexico. As no part of what was communicated to Captain Vancouver required his presence at Nootka, he determined on making the best of his way towards England.

In proceeding to the southward from Monterrey, they kept near enough to the continent to determine the latitudes and longitudes of some of the principal capes: but no part of the American coast, seen to the southward of 30° N. latitude, appears in any of the charts accompanying the account of the voyage. At the islands called Maria's Islands, between Cape St. Lucas and Cape Corientes, their boats landed. These islands produce great quantities of the *Lignum vitæ*: 'some, which was cut close to the beach and brought on board, worked up full eight inches in diameter at the heart. This wood was very ponderous, of a close black grain, and extremely hard.' At the island of Cocos, the ships procured wood and water. The geographical descriptions of former navigators differ so widely in the accounts both of the situation and extent of this island, that Captain Vancouver thinks it probable that there exists another island not far from this, to which some of the descriptions belong. A formidable account is given of the voracity of the sharks at this island; large shoals of them constantly followed the boats, and darted at the oars; and when any one was fishing, 'they would take the fish from the hooks before they could be got clear of the water: and what was still more singular, when one of their own species was taken, and they perceived he could no longer defend himself, he was instantly attacked, torn to pieces, and devoured by his companions.—

'These sharks appeared to be of three distinct sorts; the most numerous were of the tyger kind, these were beautifully streaked down their sides; the other sorts were the brown and the blue sharks; and it was singularly remarkable, that although they all voraciously devoured the two former, yet when one of the latter was caught, it remained unmolested by the rest, and even when killed, and cut up, its flesh was not eaten by its companions.'

It is erroneous, Captain Vancouver observes, 'to suppose that the shark is under the necessity of turning on his back for the purpose of taking his prey; as these sharks most commonly attained their object without turning themselves.'

After having left Cocos island, the Discovery sprang her mainmast; in consequence of which it was determined to steer

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for Valparaiso, on the coast of Chili. About the same time, Captain Vancouver discovered, to his utter astonishment and surprise, that the scurvy began to make its appearance among some of the crew: which is attributed to the cook's having, contrary to orders, given the skimmings of the boiled salted meat to the ship's company, to mix with their pease. The first skimming of any meat generally contains a considerable mixture of filth, and it is probable that the cook was not very nice in keeping the fat clear of the dirt: but it is not to be concluded that the fat of meat, which has been long salted, has a greater tendency to produce scurvy than the lean, the juices of which commonly decay the soonest. They had at this time been four years from England, and four months from Monterrey, the last place at which they had obtained fresh provisions; and notwithstanding this appearance of the scurvy, they arrived in port without its occasioning any serious misthief, and they did not lose a single man by that disease during the whole voyage.

On the 25th of March (1795) the ships anchored in Valparaiso bay. The governor, on being made acquainted with the occasion of their arrival, so far from expressing any jealousy or uneasiness, received them in a friendly manner, and gave directions for their being accommodated with every assistance that the place would afford. Don Amb. Higgins de Vallenar, the president and captain-general of the province of Chili, likewise honoured the commanders with an invitation to St. Jago de Chili, the capital. This gentleman is the same who was mentioned with so much respect by M. de la Pérouse, on his calling at Conception. His Excellency's invitation was accepted by our voyagers, and a party was formed of the two captains, and four other officers of the ships. They slept two nights on the road. The country through which they travelled appeared very thinly inhabited, till within fifteen miles of St. Jago; after which, plantations with good houses were seen on each side of the road, for the remainder of the way. When they had approached within a mile of the city, they were met by fresh horses, which were highly bred, and richly caparisoned, with saddle cloths, whips, and spurs, sent for them by his Excellency the President. Horsemanship had not been their study, and the finery of the horses not suiting well with the state of their clothes after so long a voyage, this mark of attention incommoded the whole party. The use of the spurs was declined by all; though the Spanish officer, who had charge of the escort, thought it a matter of the first importance, and expended much eloquence, and even expostulation, in hopes of overcoming their objections. Their reception by his Excellency (who was by birth an Irishman) was cordial and

polite without formality; and while they remained at St. Jago, they were welcomed by the principal families with unreserved hospitality.

Captain Vancouver has given particular descriptions of many of the buildings in this city. The money-house, or mint, is the most remarkable: it cost 700,000 dollars; and it is stated that 'about a million of specie is coined at St. Jago every year.' The coinage at Mexico, (according to the account obtained by Captain V.) between the 1st of January and the 31st of December 1793, was 'in gold pesos or hard dollars 884,262: in silver pesos 23,428,680. Total 24,312,942. This, however, was the greatest quantity of specie ever known, in one year, to have been coined in the money-house at Mexico.'

The city of St. Jago was said to contain 30,500 inhabitants, at which number Captain V. did not think they were overrated. An account is given of the instructions from the Spanish court, under the authority of which the government of the province is administered. The preservation of good order, and the promotion of industry, are the principal objects of attention: but the instructions are very general; and those to whom they are addressed having much discretionary power in the execution, they must be very liable to abuse.

Not being able to obtain a new mainmast at Valparaiso, the voyagers repaired the sprung mast as well as circumstances would admit. The main yard was likewise discovered to be sprung. On account of these defects, and of the southern winter season being far advanced, Captain V. did not think it prudent to navigate near the coast towards Cape Horn. The survey of this part was therefore not attempted.

The ships left Valparaiso on the 6th of May. After having sailed round Cape Horn, a search was made for Isle Grande, said to be in 45° 30′ S. latitude, but without success. July 3, they anchored at St. Helena. 'I had the inexpressible happiness (says Captain Vancouver) of seeing all my officers and men return to a British settlement, after an absence from England of more than four years and a quarter, perfectly well in health, and with constitutions apparently unimpaired by the extremely laborious service in which they had been so long employed, and to which without a murmur they had, at all times, and in all weather, uniformly submitted with great zeal and alacrity.' The Chatham being much smaller than the Discovery, and not so well able to encounter the roughness of a winter's passage round Cape Horn, her crew had not fared so well: but she did not, in the course of the whole voyage, lose a single man, 'either in consequence of ill health, or from any accident whatever.'

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A scarcity of rain, for three successive years, had caused great mischief and want at St. Helena. Several of the bread-fruit plants, which had been left by Captain Bligh on his return from the South Seas, had fallen to decay.—While the ships remained here, a Dutch East Indiaman, not knowing that we had commenced hostilities against them, stood into the bay, and Captain Vancouver sent his boats and took possession of her as a prize.

The remaining part of the voyage contains little that is peculiar, or worthy of remark.

In October (1795) both the vessels arrived safely in the Thames, after an absence of four years and a half.

The labours of this voyage have much lessened the grounds of reasonable hope that any navigable water-communication exists, between the Atlantic and Pacific oceans, through the continent of America:—but that they are '*as conclusive as possible*,' will not by many be readily admitted. Whatever contempt may be shewn for *closet discoveries*, they have certainly some support, while there remain openings without any ascertained termination, for the indulgence of *speculative fancies* concerning a N. W. passage. It may likewise be argued that, as the river Columbia, and Port des Français, were passed by Captain Vancouver, if not without being noticed, without being thought worthy of examination, so might other openings equally have escaped observation; and this may seem the more probable, as the entrances both into Columbia river and Port des Français are so narrow, that, at a very moderate distance from the land, their appearance would be too inconsiderable to attract notice. The river Columbia was found navigable, and appeared to continue so, at the most advanced station to which it was explored; and several navigable branches, or rivers which fell into it, were seen, for the examination of which there was no opportunity. That this river may have communication with some of the lakes already known, is not very improbable. The natives reported that it extended to a great distance inland. There is, however, very little prospect, even if a depth of water sufficient should be found to continue, that it would be practicable for ships to navigate upwards, against so strong and constant a current.

The arm of the sea within Cross Sound, named Lynn Canal, though not navigable for large ships, had the appearance of continuing much farther navigable for small vessels; which, with the circumstance of its situation, ('approaching nearer,' Captain Vancouver observes, 'to those interior waters of the continent which are said to be known to the traders and tra-

vellers from the opposite side of America, than we had found the waters of the North Pacific penetrate in any former instance,') makes it an object of consideration. In the mention of unexamined openings, Port St. Francisco must not be omitted; and this, if we may judge from the account given in the narrative, is not among the least promising.

The strongest circumstance against the probability of a communication by water through North America is the following, noticed in the concluding paragraph of Captain Vancouver's account:

'In all the parts of the continent on which we landed, we nowhere found any roads or paths through the woods, indicating the Indians on the coast having any intercourse with the natives of the interior part of the country, nor were there any articles of the Canadian or Hudson's bay traders found amongst the people with whom we met, on any part of the continent or external sea shores of this extensive country.'

On the whole, we must be allowed to repeat that the prospect is considerably lessened, but that it is by no means yet proved that a N. W. passage does not exist.

With respect to the discoveries attributed to more early times, whatever may be alleged against the authenticity of them, there appears such a concurrence of facts, so much similitude between those descriptions and the most material particulars that have been ascertained by modern discovery, that it must not be allowed that the former accounts originated in unfounded tradition. Notwithstanding that the entrance of the channel which Captain V. calls the *supposed* Straits of De Fuca, instead of being found between the 47th and 48th degree of North latitude, is situated almost half a degree to the northward of the 48th degree, yet, it having been found that a strait, with a considerable extent of inland sea, does really exist; and that to the north of the strait there are many islands, or archipelagos of islands; it is a much more reasonable belief that some error crept into the old accounts, or that the situations may have originally been erroneously described, than that an assertion of the existence of a strait and of an archipelago of islands should have been made from mere random conjecture.

The endeavour to discover a passage from the more distant and unknown coasts of North America, to the Atlantic Ocean, has of late years been preferred to the more plain and natural mode of endeavouring to penetrate into this side of America. The ill suceess of former attempts, in Hudson's and in Baffin's bay, ought not to be esteemed as arguments in favour of giving a preference to the later mode. Most of these attempts were made at a time when navigators were not so well provided with

accommodations of every kind, as at present. Perhaps the best argument, in favour of commencing on the western side of the continent, is the different temperature of the climate. In high latitudes, the most prevailing winds are westerly; and those winds being from the land, on the eastern coast of the continent, occasion the severity of the winter season to be greater than where the most prevailing winds come immediately from the ocean. We find that, in 1794, Captain Vancouver recommenced his survey of the American coast near to Cook's Inlet, early in April; that on the 15th of that month, he was to the northward of 60° N. latitude; and that he found no impediment from ice, nor from the weather:—but the difference of temperature can scarcely be so great, as to be an equivalent for the advantages of beginning so near to our own settlements; whence, it might be presumed, a few favourable seasons of examination would either discover a passage, (if one exists,) or find a termination to every opening, and ascertain an uninterrupted continuance of coast.

The importance to Europeans of the western parts of North America seems, atpresent, to be confined to the procuring furs. We have already remarked on the quantity of this article produced in the Spanish settlements, and in the parts of the coast which the Spaniards claim as their territory: but most of these furs are said to be of an inferior quality. This trade must be an object of greater importance to the Russians, and to the Spaniards, than to any other European nation. Captain Vancouver was of opinion that no Europeans are so well qualified to carry it on as the Russians; since their accustomed manner of living differs so little from that of the American natives, that they were enabled to associate, and many of them did associate with the natives. It was likewise understood 'that, in all their establishments, the children of the natives are taken at an early age, and educated in the Russian language; and, no doubt, instructed in such principles as are most likely hereafter to be advantageously directed to the interests of that nation.'

Beaver skins are also procured on this coast. In the course of the voyage, not many instances appear of sea otters being seen in considerable numbers: but the most remarkable was in an arm of the sea near the 54th degree of latitude, where 'the sea abounded with sea-otters. They in the most sportive manner played about the boats, rearing themselves half way out of the water, and holding up their young ones in their fore paws, as if to view the boats as they passed.'

Captain V. has given a list of 20 vessels of different nations (exclusively of Russians and Spaniards) which were employed on the west coast of North America, collecting furs, in the year

year 1792. He was informed that their adventures in general turned to good account. The articles for traffic most esteemed by the natives were fire-arms, blankets, blue great coats, tin kettles, tobacco, and snuff. Sugar would probably be a favourite commodity;—for it is related that, on some being given to a Chief, he was 'greatly astonished at the taste of it, and gave some to his attendants, who were equally surprised.'

The remarks which we have made in the progress of our account, as well as the immediately preceding observations, are proofs that we have regarded this performance as entitled to great attention. There is reason for believing that Captain Vancouver neglected no opportunity of obtaining information, and his narrative therefore contains much that is both curious and useful.

In the miscellaneous observations at the end of the third volume, is given an account of the capture of the Argonaut, by the Spaniards, on the west coast of North America. On this circumstance, we have no occasion here to remark, as Captain Colnett, who commanded the Argonaut, has lately published a narrative of that transaction; of which we shall very speedily take ample notice.

Capt. B...y.

ART. III. *Juridical Arguments and Collections.* By Francis Hargrave, Esq. Barrister at Law. 4to. pp. 650. 1l. 7s. Boards. Robinsons.

WITH whatever success juridical arguments might have been attended in the particular causes in which they were employed, they are in no danger of being useless to, or neglected by, the public, when proceeding from the pen of so eminent a barrister as Mr. Hargrave. We have long admired his abilities, and have had many opportunities of deriving assistance from his professional labours. His legal precision, and the extent of his knowlege, we have rarely, if ever, seen equalled; and we should have imagined, from his various and valuable endowments, that he had been a prosperous advocate. The plaintive and melancholy manner, however, in which he frequently speaks of himself in the work before us, forbids us to continue to entertain so pleasing and so natural an expectation. He considers himself as immured in a bark almost shivered by adversities; as exposed to the danger of new tempests and new proscriptions; and he talks of the feeble efforts and flagging spirits of a proscribed and almost shipwrecked advocate. To what circumstances such failure is to be attributed, we know not: we can only regret its existence, and

wonder that, where there is so much evident merit, there should not be a proportionable degree of encouragement.

The present volume contains thirteen arguments; some of which discuss topics of a general, and some of a confined, nature; and one or two of them involve points which belong more properly to the knowlege of our constitution, than to the knowlege of our law. We shall lay before our readers an account of the subjects introduced; and, where we think that we can do it with advantage, we shall make some extracts.

'The *first* article is an opinion written in 1793, upon the commitment of two gentlemen by the house of lords in Ireland, in the way of punishment, for a *contempt* and *breach of privilege*. The offence charged was publishing a paper, which reflected upon the proceedings of a secret committee of the Irish lords appointed to inquire into the causes of risings in various counties in Ireland. In the paper, the publication of which caused this commitment, the imputations were that the committee had grossly exceeded and abused its power,—by administering oaths,—by enforcing witnesses to answer interrogatories criminating themselves,—and by examining witnesses, to support prosecutions depending, and at the same time unconnected with the cause of the tumults the committee was appointed to investigate. Exclusive also of these imputations, the paper contained some doctrines, denying the right to various powers exercised both by the whole house and its committees: for it denied,—the right of the whole house acting legislatively to administer an oath,—the right of the whole house acting judicially to delegate to a committee,—the right of a committee proceeding judicially to act in secresy,—and the right, either of the house at large, or of a committee, to exhibit interrogatories tending to criminate the party examined, except at his own desire and to purge him from contempt. For these imputations and doctrines, which were mixed with considerable asperity of language, the two gentlemen were ordered to attend the Irish house of lords; and upon confessing, that they had authorized the printing of the paper, they were adjudged by the house to be guilty of a contempt and breach of privilege, and were sentenced to imprisonment for six months and to pay a fine of 500l. a-piece, and not to be discharged till the fine should be paid. Such was the case, upon the result of which the opinion was taken. The chief questions proposed were, on the legality of the commitment, and on the relievableness against its effect by resorting to the writ of habeas corpus. But, in writing upon these points, the author was in some degree called upon, to consider the *antiquity and nature of the jurisdiction of both houses of parliament in England over contempts and breaches of privilege*, the extent of such jurisdiction, and the manner of exercising it; and in this latter respect, the power of our house of lords in contempts and privilege to *imprison beyond the session*, and the power in such cases *to impose* fines. He also found it expected from him, that he should explain himself, on the competency of the judges to examine into the legality of an imprisonment under an order from either of our houses of parliament; and that he should consider, not only the

right

right of suing out the writ of *habeas corpus* for relief against any excess in such commitments, but how the exercise of that right was attainable independently of the provisions in our *habeas corpus* act of the thirty-first of Charles the Second. Accordingly the reader will find in the first article of the volume somewhat referable to all of these constitutional subjects. He will also see, that the author risked disclosing his impressions, with as much fullness and explicitness, as could well be expected in a professional opinion upon points of such delicacy.'

We have read the whole of this argument with much pleasure, as it conveys clear and distinct information on a variety of constitutional points; some of which we had proposed to have transcribed, but we find the whole so connected that it would be difficult to quote any part without injury to the remainder. The inclination of Mr. Hargrave's opinion (though not without considerable doubts) seems to be that the commitment was legal: but, even if that point were allowed to be questionable, he thought that no court of law would undertake to inquire into its legality.

The two following arguments, comprised in one article, were delivered before Lord Thurlow in the year 1787 in the case of *Scott and his wife* against *Vernon and others*, on the effect of a legacy with condition restraining marriage without consent of the legatee's natural mother. The case, in which these arguments were delivered, is reported in 2 Bro. Cha. Cas. 431.—The result of the cause was a decree supporting the marriage condition; and, from the printed Report of the judgment, it appears that the Chancellor did not sustain the condition merely as a *precedent* one, but proceeded on the foundation of supporting all conditions not imposing restraints repugnant to the policy of our law concerning marriage.

In the course of the first argument, Mr. Hargrave examines the foundations of the doctrine *in terrorem;* questions its propriety; and endeavours to circumscribe its limits. He then proceeds to shew that neither the Roman law nor our ecclesiastical jurisdiction is responsible for this doctrine; and he points out the inconsistency of our courts of equity in having received it, and at the same time in some measure having avoided it.—From this part of the discussion, we shall make a considerable extract; as we deem the subject curious, interesting, and treated with singular learning and ingenuity.

'With respect to the Roman law, it certainly was jealous of and unfavourable to conditions in restraint of marriage. Many constitutions are to be found in that law tending to promote matrimony and discourage celibacy. But the most famous provisions of this kind are those contained in a law of the time of the emperor Augustus. The law, I allude to, is often called the *Lex Julia;* but its proper denomination is *Lex Papia Poppæa*; the real *Lex Julia* appearing to be

be a much earlier law of the same reign; though Gravina and other learned civilians have heretofore mistaken these two laws for one law with two different appellations. It is understood, that it was a principal object both of the *Lex Julia* and the *Lex Papia Poppæa*, to restore the population of the country, to prevent all unreasonable impediments of marriage, and to check the pernicious fashion of celibacy with its concomitant irregularities; for so general was celibacy become, when the latter of these laws was passed, that scarce a citizen having children could be found who was worthy of being consul. *Causa*, says Heineccius in the Preface to his elaborate Comment upon the latter of these laws, *ferendæ legis honestissima, ut Romani, adulteriis et vagæ veneri adsueti, præmiis et pœnis, ad ducendas uxores et prole locupletandam rempublicam, adducerentur.* Amongst the provisions in the *Lex Papia Poppæa* for encouraging matrimony, there is one expressly aimed against legacies on condition of celibacy. It is the 29th chapter of the remnants of this law, as collected and arranged by Heineccius, and the 17th in Gothofred's edition. The words are, *si quis celibatûs aut viduitatis conditionem hæredi legatoriove injunxerit, hæres legatoriusve eâ conditione liberi sunto; neque eo minus delatam hereditatem legatumve ex hâc lege consequuntur.* In plain English, if a legacy was given on condition of celibacy or widowhood, the condition was to be null and void, and the legacy was to have effect as if no condition had been added. Such was the law itself; and in terms it only nullifies conditions forbidding marriage *wholly*, without touching upon such conditions as are merely calculated to restrain improper marriages. The words of this law therefore are not enough to shew, that all conditions in restraint of marriage were made invalid: for at least the letter of the law was confined to absolute prohibitions of marriage, which our own law equally reprobates, except where a wife is restrained from a second marriage. It seems however, that the frauds upon this famous Roman law provoked a free and large interpretation; in consequence of which it was made to reach conditions merely on account of *their tendency* to celibacy. Thus if a legacy was given on condition of marrying a particular person, who was of such inferior degree or other description as to render the marriage enjoined disgraceful or impracticable to the legatee, it was deemed equivalent to a condition of celibacy, and as such was brought within construction of the law. If also a legacy was given to any one, under a condition to marry *ex arbitrio alterius*, that is, as another person should appoint, the condition was null; a construction only to be accounted for, by supposing, that it had become a practice to evade the law by naming some person with a secret confidence not to consent to any marriage. But how is it possible to argue from all this, so as to make any just inference in respect to our own law? The comparison between the law of Rome and the law of England on this subject serves to shew, that in some points they agree, in some they differ. Both laws favour the liberty of marriage; and both reprobate celibacy; on which last account both refuse giving effect to conditions not to marry. But nearly at this point the resemblance ceases; for it is certain, that our law will endure conditions not to marry without consent, regarding neither limitation of time,

time, nor the sort of person entrusted with the power, where no intention appears of imposing a restraint so as to make marriage impracticable: and it may be equally true, that, for the sake of guarding against frauds upon its policy in favour of marriage, the Roman law would not tolerate such conditions. It may be pleasing to make such comparisons. For some purposes, and on some occasions, it may be useful to undergo the labour of them. But in deciding what is the law of England on this subject, how can it apply in argument in this court, that the law of Rome differs from our law? Can it be reasonably or decently said, that this court, or even any of our ecclesiastical courts, ought to adopt the *Lex Julia* and the *Lex Papia Poppæa*, or the interpretations of those laws amongst the Roman jurisconsults, in a point about which our own law prescribes differently? Where the law of England has not given the rule upon a subject within ecclesiastical or admiralty jurisdiction, I clearly understand, that it may be open to such forums to consult and adopt the decisions of the Roman law. But I cannot reconcile myself to the strangeness of deciding even in the courts spiritual upon a principle of Roman jurisprudence, where the law of England distinctly furnishes a principle of another kind. Besides it is far from being clear to me, that the Roman lawyers did reject conditions in restraint of marriage in the extent supposed. In the case cited from the Roman law, the condition is not limited in point of time, but is so expressed as to continue during the legatee's whole life; and the power of consenting is seemingly lodged in a *stranger* to the legatee. But here the condition of marriage with consent is annexed to the legacy for a time only, that is, till the legatee's age of twenty-one; and the person entrusted with the power of consent is the legatee's own *parent*. In other words, the condition is to enforce attention to that consent to marriage, which the law itself requires. Yet the rule of this court, which is relied upon, has been ever stated with a generality sufficient to govern even such a case. But where is the authority to be found, by which it can be proved, that the Roman law would have rejected a condition not to marry under *full age* without consent of the *father?* I take it to be clear, that it was prohibited by the Roman law to marry without consent of parents, whatever doubts there may be as to the effect of such a marriage when actually celebrated. Is it probable then, that the same law would condemn a condition requiring such consent? In this last point of view, the reference to the Roman law leads rather to the approbation of such a condition of marriage as is imposed in the present case, than to furnish any authority against it.

'The assertion, that our ecclesiastical courts follow the Roman law in deciding upon legacies, and therefore nullify all conditions against marrying without consent, appears to me as still more open to a variety of remark. If I am right in my observations upon the Roman law, it is most probably a mistake to suppose, that the law against such conditions was interpreted in the extent, in which the court of chancery is understood to have received the doctrine about conditions of marriage *in terrorem*. The rule here is always stated so broadly, as to take in those cases in which the consent is required from the

parent,

parent, and limited to the *age of twenty-one*, equally with those in which the power of consent is given to a *stranger* and made *perpetual*. But as I have already endeavoured to shew, it remains to be proved, that the Roman law was interpreted in such latitude as to reach conditions of the former and limited kind. It may be asked also, what is the evidence, that the doctrine of marriage conditions *in terrorem*, as practised in our courts of equity, was previously a rule of the ecclesiastical courts. Naturally one would expect, that the evidence of this should come from *their* learned writers, or from the records and reports of *their* jurisdictions. But inquire at Doctor's Commons; and I have reason to suppose, that the learned gentlemen of the civil law, even the most profound of them, would be at a loss to furnish authorities from their treasures, and therefore would refer us back to our own repositories. Since the habit of resorting to courts of equity in cases of legacy, and experience of the convenience of the peculiar powers incidental to equitable jurisdictions, the ecclesiastical courts have had little and very unfrequent conusance of legacies; and as I am told, their jurisdiction over them has gradually fallen into so much disuse, as to be almost in a dormant state. When, however, the spiritual courts are called upon, it is understood, that instead of claiming to give the rule to chancery as the younger jurisdiction, they consult our equity reports for their guidance. The truth is, that Swinburne's book on Testaments and the Orphan's Legacy by Godolphin are almost the only books from our civilians, which contain any matter on the law of legacies. But Swinburne is wholly occupied with the Roman law upon the subject; and Godolphin, except where he borrows from the former, takes his materials from reports of decisions by the temporal courts. It is singular also, that the only reference by name to be met with, to a legacy case depending upon condition of marriage decided by the spiritual courts, is in Mr. Serjeant Moore's Reports 857, and there Judge Winch cites one Pigott's case, in which the legacy was held good notwithstanding breach of a condition, that the legatee should not marry without consent of her mother. Thus without so much as one decision immediately from the spiritual courts, and with only one single short decision of those courts furnished to us through the report of a common lawyer, the foundation of the complicated and diversified doctrine of equity in respect to marriage conditions *in terrorem* is affirmed to originate from their authority and example. But this, I must say, is a slight ground for resting the doctrine of *in terrorem* on the antient practice of the ecclesiastical courts as the main and primary foundation. From such anxiety also to make these courts responsible for the doctrine, it looks as if there was some distrust of its intrinsic merit.'

The whole learning on this important subject is brought forwards, and placed in a perspicuous point of view, in the course of these arguments; which we recommend with perfect confidence to the attention of our professional readers.

The third article is an argument at law for the title of James Brydges, third and last duke of Chandos, to the manor of Villiers,

liers, in Queen's County, Ireland. The fourth is an argument for the same nobleman in the equity suit against him, respecting the same manor of Villiers.

The fifth article of the volume consists of two arguments in the famous MYDDELTON cause determined by the present Lord Chancellor in July 1794. The cause was between Mr. Myddelton of Chirk Castle and his son, both of whom are since deceased; and it was instituted for the purpose of relieving the father from the pressure of a settlement which he had made, on the ground of there being fraud in the manner in which it was obtained from him. The case is reported in 2 Ves. Jun. 391. and the plaintiff's bill was dismissed with costs.

The Duke of Athol's claim, under a parliamentary entail of the Isle of Man, is the subject of the sixth article. Of the seventh, the Author thus speaks:

'The *seventh* article consists of collections concerning the *Appropriation of Parliamentary Supplies*; and is rather parliamentary and constitutional than strictly juridical. It was hastily framed soon after the sudden dissolution of parliament in the spring of 1784, before passing of the usual act for appropriating the supplies of the session: and this attention of the author to the subject was, in consequence of his understanding it to be the wish of the King's chief minister, under whose immediate department the author then held a kind of official situation, to have some statement to assist his enquiries.'

A collection relative to writs of error in criminal cases, with some deductions as to the state of authorities on the extent of the right of the subject to such writs, will be found in the eighth article.—After having enumerated the authorities on this nice and important subject, the author concludes his inquiries with the following opinion:

'From the preceding review of the cases and authorities on the question whether a writ of error in criminal cases is a writ *of right* or *of favour*, it appears,

'1. That long previously to the reign of Queen Ann there were opinions in favour of considering writs of error even in treason and felony as writs of right; particularly the opinion of Lord Chief Justice Wray in the King's Bench in the reign of Queen Elizabeth, an approbation of that opinion by Lord Coke, with a resolution of the House of Commons in 1689 declaratory of their sense of the law accordingly.

'2. That, consequently, the idea of its previously being a perfect novelty, to consider writs of error in any criminal case as writs of right, seems to be a mistake, founded on not having sufficiently attended to the history of the subject.

'3. That in the reign of Queen Ann there is a resolution of ten Judges out of twelve delivered in parliament, declaratory of the absolute right to a writ of error in all criminal cases except treason and felony.

'4. That

'4. That in the same reign there is a resolution of the lords after hearing the judges, declaring the absolute right of the subject to a writ of error in all criminal cases without so much as one exception.

'5. That, since the reign of Queen Ann, the right of the subject to a writ of error in criminal cases under treason and felony has been recognized in Westminster-hall by some judges without contradiction from the rest.

'6. That Lord Mansfield qualifies the right to a writ of error in misdemeanors, by explaining the writ to be not *absolutely of course*, but only claimable as a right on *probable* error shewn.

'7. That, whether Lord Mansfield's qualification of the right to a writ of error in misdemeanors is adopted by other judges, or is his lordship's particular opinion, is not discoverable at present.

'It may perhaps be expected, that after advancing thus far into the question of right concerning writs of error in criminal cases, I should add my own opinion, or at least something approaching to one. But I purposely avoid so doing. It is a subject, on which I have not thoroughly made up my mind in the full extent. Besides, on a point of such general importance, and one now depending before the first law-officer of the crown, I think it more becoming me not to offer my private sentiments. If the matter I have collected is of sufficient weight in favor of Mr. *****'s claim to a writ of error, the aid of my opinion will not be necessary to the support of his pretension. If the authorities I have stated shall not in themselves avail to prevent Mr. Attorney General from refusing his fiat to the claimed writ of error, it would be an inexcusable presumption in me to suppose, that any opinion from me would have influence enough to supply the deficiency of those authorities.

'Not having been consulted on the subject of these observations till yesterday, I probably have omitted some authorities, which with more time I might have collected. I particularly think it likely, that both Fitzherbert's *Natura Brevium* and the Year Books may furnish material information. But though I may have omitted many things of consequence, I may add, that I could not have collected nearly so much in so short a time, if heretofore I had not made some researches on the subject.'

We are next presented with an argument for the Earl of Inchiquin, on his appeal to the Irish House of Lords from a decree of the present Lord Chancellor of Ireland, made in Hilary term 1794, in a cause in which Mr. Burnell was plaintiff, and the Earl of Inchiquin, the Duke of Leinster, and the Earl of Shannon, were defendants. The great point of the cause was on the construction of a covenant of renewal, in a lease granted in 1668 by the Earl of Inchiquin, great great grandfather of the present Earl, of certain lands in Ireland, to Mr. Burnell's great grand-father, for sixty-one years, at 10l. per year; and on the terms of the lessees maintaining the buildings, and not parting with the premises without the lessor's consent

and giving the refusal to him. The cause was heard in the Court of Chancery in the year 1794; and the Chancellor was of opinion that, under the covenant of renewal, the original lease was to be construed as *renewable for ever*, and he decreed accordingly against Lord Inchiquin. When the hearing of the cause came before the House of Lords in Ireland, there was an order absolutely reversing the Chancellor's decree; founded, it is said, on the unanimous opinion of the Judges against the right of renewal.

The tenth article is an argument for Mr. Mackreth's petition of re-hearing, on a decree made at the Rolls, and affirmed by the Chancellor; and the thirteenth consists of proposed reasons for an appeal to the Lords from this decree.

Two arguments in the Exchequer, for the corporation of Liverpool against the corporation of London, will be found in the eleventh article. The object of this cause was to try, in a short way, the great question whether the privilege of London CITIZENS, to be exempt from antient tolls and duties throughout England, extends to NON-RESIDENT Freemen. For this purpose, there is a statement of some authorities against extending the London privilege to NON-RESIDENT FREEMEN, as a sort of supplement to the various authorities which the author had several years before brought forwards against such an extension, in the printed case for the Lynn Corporation, on the writ of error before the House of Lords in LONDON against LYNN.

The twelfth argument is on the admissibility of the votes of the Claimants of the Earldom of Caithness and Barony of Ochiltree, at the election of the sixteen Peers for Scotland in 1790.

In the *Appendix*, are contained papers connected with some articles in the body of the work, and introduced for the purpose of making them more intelligible.

Such are the various contents of this useful and learned publication; in which much will be found to amuse literary curiosity, and still more to assist the accurate investigators of legal topics.

S.R.

ART. IV. *Observations on the Western Parts of England*, relative chiefly to Picturesque Beauty. To which are added, a few Remarks on the Picturesque Beauties of the Isle of Wight. By William Gilpin, M. A. Prebendary of Salisbury; and Vicar of Boldre, New Forest. 8vo. pp. 370, and 18 plates. 1l. 5s. Boards. Cadell jun. and Davies. 1798.

WE rejoice that the venerable founder and master of the Picturesque School,—for so we may truly intitle the writer of these Observations,—has been pleased once more to

admit us of his party, and to point out to our attention the leading features of perhaps the most beautiful, if not the most romantic, part of our island. Upwards of thirty years have now passed, since, as a portrait-painter, (if we may be allowed the expression,) he first excited our applause by some sketches of Biography, which the critic should contemplate for their elegance, and the saint for their piety *. His talents for *landscape* were long, in a great measure, unknown; and they would probably have still continued so, if Mr. Mason had not introduced them to the notice of the public †. By a happy union of the pen and the pencil, Mr. Gilpin has since carried the powers of description to their fullest extent; and his masterly delineations have not only given a new interest to the most celebrated scenes, but have unfolded many sweet recesses which had hitherto escaped the eye of the traveller.

From the volume before us, which has a still higher claim to a favourable reception than any of the former, (the profits of it being destined to lay the foundation of a charitable fund,) we shall extract a few of the most striking passages as they occur; first presenting our readers with a view of the drawing-room of Norbury-house, near Guildford, the seat of Mr. Lock; which exhibits a very elegant style of decoration, and is justly considered by Mr. Gilpin as an object of great curiosity.

'The walls are covered with a hard and durable stucco, and are painted by Barret. The whole room represents a bower or arbour, admitting a *fictitious* sky through a large oval at the top, and covered at the angles with trellis-work, interwoven with honey-suckles, vines, clustering grapes, and flowering creepers of various kinds. The sides of the room are divided by slight painted pilasters, appearing to support the trellis roof; and open to four views. That towards the *south* is *real*, consisting of the vale inclosed by Box-hill, and the hills of Norbury, and Dorking, which hath been just described. The other three are *artificial*. Two of them, which are the two end-views, cover the whole sides of the room from the ceiling to the base.

'The scene presented on the *west* wall, is taken from the lakes of Cumberland. It is an exact portrait of none of them; but a landscape formed from a collection of some of the happiest circumstances which belong to all. No real view could present so beautiful and complete a picture.'—

'The near ground is composed of bold rocks, and other rough surfaces, with which the banks of lakes commonly abound. Among these a wild torrent, variously broken, pours its waters under the surbase of the room, which intercepts it.'—

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* See the first volume of our General Index, p. 467. CLASS, *Biography*.

† See M. R. vols. xlvi. and lvii. Tables of CONTENTS.

'The other grand landscape occupies the *eastern* wall of the room. It is, I think, inferior to that on the *west;* yet it is a noble work. The scene is sylvan, and the objects of course less grand.'—

'The *north* side of the room, opposite to the windows, offers two more landscapes; divided by the breast of the chimney; which is adorned with a pier-glass, let into the wall, and covered thick with a frame-work of honey-suckles, vines, wild-roses, and various creepers in flower; all painted with great beauty. These two pictures on the *north* are a continuation of the scene exhibited on the western wall, which they unite with the landscape on the *east*. Clustering vines, and wild flowers, form a frame-work to all these beautiful pictures, both at the base and along the trellis-work of the sides; so as to give them the resemblance of being seen through the openings of the arbour.

'With this *unity in the subjects* of these landscapes, the *light* also, and other *particulars* coincide. The *season* represented, is autumn. Every where round the room the year is in its wane. Each tree, and bush, is touched with its autumnal hue. The *time of the day* is about an hour before the sun sets, which, after a rainy afternoon, is breaking out from the watery clouds that are scattered before a gentle breeze, in too high a region of the air to affect the surface of the lake. The rainy clouds, which are broken in the *west*, hang heavy in the north; and give a dark lurid tint to the lake below. In the *north east angle*, a ray of sunshine, breaking through the gloom, gilds a castled cliff: but the clouds condensing again, fall in a heavy, though a partial shower on the landscape in the east.

'As the sun is represented setting on the *western* side of the room, it is *supposed* to illumine the several objects in *all* the pictures; and when the *natural hour* corresponds with the *hour represented*, there is a coincidence of *artificial* and *natural* light. All the landscape, both within and without the room, appears illumined by the same sun. The union too between the *natural* and *artificial* landscape, is still farther assisted by a few straggling trees, which are planted before the windows, with a view to connect the picture with the *country*.

'We dwell the longer on this curious and interesting room, as it is the only one of the kind perhaps in England. There is a room painted by the celebrated Gasper Poussin, at the villa of Monte Dragone, near Rome, on a plan something like this; but Gasper has paid no attention to the union of the several *lights*, nor to the *characteristic agreement* of the several views.'

Mr. Gilpin's remarks on the propriety of introducing monumental sculpture into our churches, whether the reader agrees with him or not, are well worthy of regard:

'Indeed I know not whether monuments at all in such churches as pride themselves on their architecture, can in any shape be considered as ornamental: the nave of Westminster-Abbey, for instance, is injured, *as a piece of architecture*, by the several monuments introduced into it, which, like spots of light in a picture, injure the *whole*; they break in upon its simplicity and grandeur.'—

'In all cathedrals there are cloisters and other recesses, which are the proper situations for monuments: and even here every thing should

should not be admitted that comes under the name of a monument, and pays the fee. Plain tablets may be allowed; but when figures and ornaments are introduced, they should be such as neither disgrace the sculptor, nor the person whom he meant to honour. It would be of great advantage also to class monuments, as we hang pictures in a room, with some view to symmetry and order; and, if different professions were ranged by themselves, it would still make it more agreeable to examine them.'

Not less deserving of attention are his strictures on the ornamental furniture of a great house:

'The *apartments* of a noble house should not suffer their *ornaments* to obtrude *foremost* upon the eye. Each apartment should preserve its *own dignity;* to which the *ornamental* part should be *subordinate.* In every work of art, and indeed of nature also, it is a breach of the most express picturesque canon, if the *parts* engage the eye more than the *whole.* The hall, therefore, the staircase, the saloon, and other apartments, might be adorned with a few busts and statues; but to receive the whole collection, perhaps a long gallery should have been *professedly* built. In this they might have been arranged in *profusion.*'

The following ludicrous anecdote is related concerning our great English painter:

'The east window of St. Mary's chapel is adorned with a picture of the Resurrection, in painted glass. Sir Joshua Reynolds gave the design; in which, though he had represented our Saviour rising, he had left the tomb still closed and sealed. The Bishop remonstrated, that he had given the fact contrary to the truth of Scripture; where, it is said, the seal was broken, and the stone removed. Sir Joshua, however, still persisted; contending, that by not breaking the seal, he had made the miracle so much the greater; and it was not without some difficulty that the Bishop got him persuaded to correct his design. The truth, I suppose, was, Sir Joshua had not fully, at first, attended to the circumstances of the story; and did not care to be at the trouble of altering his picture.'

Mr. Gilpin has been accused of continually discovering a propensity

"To judge of Nature by an Artist's rules:"

but those who advance the charge should remember that this was the very object which he proposed to himself at the outset; and that the fault (if it be a fault) is imputable to the original scheme, and not to his manner of executing it. Nature, however, (to use the language of Shakspeare) is "still his goddess;" and then perhaps most the object of his admiration, when she disdains all rule, and baffles every effort of the pencil.

'As we approached Barnstaple, the view from some of the high grounds is very grand, composed on one side of Barnstaple-bay, and on the other of an extensive vale, the vale of Taunton carrying the

eye far and wide into its rich and ample bosom. It is one of those views which is too great a subject for painting. Art, confined by the rules of picturesque composition, must keep within the compass of inch, foot, and yard. But such slender confines cannot rouse the imagination like these extensive scenes of nature.'—

'The fact is, art is a mere trifler compared with Nature. The efforts of both, it is true, may be called the works of God: but the difference lies here. In the efforts of *art*, God works with those little instruments called *men*; he works in miniature. But when he works in the grand style of *nature*, the elements are his instruments.'

Mr. Gilpin did not advance far into Cornwall, though that country is so full of promise to the Antiquary and the Mineralogist.

'He could have wished also to have heard the winds howl among the bleak promontories of the Land's-end: to have seen, through a clear evening, the light fall indistinctly on the distant isles of Scilly; and to have viewed the waves beating round the rocks of that singular situation, Mount St. Michael.'

The loss of this last scene he regretted more than any thing else:—but to travel over deserts of dreariness in quest of two or three objects seemed to him to be buying them at too high a price.

From Bodmin he proceeded to Lescard, and visited Plymouth on his return. We regret that we cannot attend him thither; that we cannot convey our readers, in such company, to the sublime sea-views of Mount Edgecumb, the curious structure of the Edystone light-house, and the hanging woods and rocky scenery of the Tamer and the Dart:—but we have already exceeded our limits; and must content ourselves with the glimpse of an Abbey, which is probably unknown to the generality of readers:

'In a sequestered part of the country, where Devonshire and Dorsetshire unite, lies a circular valley, about a mile and half in diameter.

'Its sides slope gently into its area in various directions; but are no where steep. Woody skreens, circling its precincts, conceal its bounds; and in many parts connecting with the trees, which descend into the bosom of the valley, form themselves into various tufted groves. Through the middle of this sweet retreat winds a stream, not foaming among broken rocks, nor sounding down cataracts; but mild like the scene it accompanies, and in cadence not exceeding a gentle murmur. From this retreat all foreign scenery is excluded. It wants no adventitious ornaments; sufficiently blessed with its own sweet groves and solitude.

——"Such *landscape*
Needs not the foreign aid of ornament;
But is, when unadorned, adorned the most."

'This happy retirement was once sacred to religion. Verging towards one side of the valley stand the ruins of Ford-abbey. It has

has never been of large dimensions, but was a model of the most perfect Gothic, if we may credit its remains, particularly those of a cloister, which are equal to any thing we have in that style of architecture. This beautiful fragment consists of eight windows, with light buttresses between them, and joins a ruined chapel on one side, and on the other a hall or refectory, which still preserves its form sufficiently to give an idea of its just proportions. To this is connected by ruined walls a massy tower. What the ancient use of this fabric was, whether it belonged to the ecclesiastical or civil part of the monastery, is not now apparent; but at present it gives a picturesque form to the ruin, which appears to more advantage by the pre-eminence of some superior part.

'At right angles with the chapel runs another cloister, a longer building, but of coarser workmanship, and almost covered with ivy. The river, which enters the valley at the distance of about half a mile from the ruin, takes a sweep towards it, and passing under this cloister, opens into what was once the great court, and makes its exit through an arch in the wall on the opposite side.

"This venerable pile,
——clad in the mossy vest of fleeting time,"

and decorated all over with variety of lychens, streaming weather-stains, and twisting shrubs, is shaded by ancient oaks, which, hanging over it, adorn its broken walls without encumbering them. In short, the valley, the river, the path, and the ruins are all highly pleasing; the *parts* are beautiful, and the *whole* is harmonious.

'They who have lately seen Ford-abbey will stare at this description of it. And well may they stare; for this description antedates its present state by at least a century. If they had seen it in the year 1675, they might probably have seen it as it is here described. Now, alas! it wears another face. It has been in the hands of *improvement*. Its simplicity is gone; and miserable ravage has been made through every part. The ruin is patched up into an awkward dwelling; old parts and new are blended together, to the mutual disgrace of both. The elegant cloister is still left; but it is completely repaired, white-washed, and converted into a green-house. The hall too is modernized, and every other part. Sash-windows glare over pointed arches, and Gothic walls are adorned with Indian paper.

'The grounds have undergone the same reformation. The natural groves and lawns are destroyed; vistas and regular slopes supply their room. The winding path, which contemplation naturally marked out, is gone; succeeded by straight walks, and terraces adorned with urns and statues; while the river and its fringed banks have given way to canals and stew ponds. In a word, a scene abounding with so many natural beauties was never perhaps more wretchedly deformed.'

When we compare the descriptions given by Mr. Gilpin with those of his predecessor Mr. Gray*, we must confess that the last

* See his Journey through the North of England, in Mason's Memoirs, Sect. v. Let. iv.

are the most glowing and poetical: but the first appear to have the greatest precision, and to convey the clearest picture to the eye of the mind. Mr. Gray excites a thousand enchanting associations, and, by the talisman of his genius, throws a splendour *unborrowed of the sun* on every object which he notices; while Mr. Gilpin, though not so powerful a magician, is perhaps a better painter. His outline is more faithful and determined, and his colouring is less heightened beyond the truth. He indeed may be said to be the first who has examined the face of a country by the rules of picturesque beauty, opening the sources of those pleasures which are derived from the comparison; and from his criticisms on natural and artificial scenery have originated, in a great measure, a spirit of investigation and a system of improvement, which, we doubt not, will establish our superiority in an art which we may justly call our own.

Rogers.

ART. V. *Travels in the Two Sicilies, and some Parts of the Apennines*, translated from the Original Italian of the Abbe Lazzaro Spallanzani, Professor-Royal of Natural History in the University of Pavia, &c. &c. 8vo. 4 Vols. With Eleven Plates. 1l. 8s. Boards. Robinsons. 1798.

THE obligations of the literary world to the *Abbàte Spallanzani* are already considerable, and his science has given celebrity to his age and country; the latter of which he has illuminated as a single star shines through the gloom of a dark night. Of the present work, it may be justly remarked that it presents a treasure of geology and chemical information; although it may be found, in certain positions and deductions, liable to be questioned, and in other particulars rather too much dilated. We cannot sufficiently admire the indefatigable perseverance of this philosopher, which supported him in so many hazardous investigations; nor the self-possession with which, under circumstances of imminent danger, he could exert all the powers of a mind replete with knowlege and a love of truth *.

Having observed thus summarily on the importance and merits of these volumes, we presume that a concise analysis, and some of the author's details in series, may be more acceptable to readers of general curiosity, than an attempt to controvert or to establish his axioms of mineralogical study.

The first visit was made by the Abbàte in the summer of 1788 to Mount Vesuvius; where he found Wedgewood's

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* For the former works of this respectable naturalist, see the General Index to the Old Series of the M. R. from 1749 to 1789; both inclusive.

pyrometer

pyrometer the most efficacious instrument in ascertaining the nature of the Lava. On the 4th of November, he passed the night at the Hermitage *del Salvatore*, about two miles from the summit of the mountain.

'I rose,' says he, 'four hours before day, and continued my journey towards the burning crater, from which, as I have before said, flames arose at intervals, which on a nearer approach appeared larger and more vivid; and every ejection was followed by a detonation, more or less loud, according to the quantity of burning matter ejected: a circumstance I did not notice before, on account of the distance, but which became more perceptible to the ear in proportion as I approached the mouth of the volcano; and I observed, when I had arrived within half a mile of it, in a direct line, that the ejections preceded their accompanying explosions only by an instant, which is agreeable to the laws of the propagation of light and sound. At this distance not only flames were visible to the eye, but a shower of ignited stones, which, in the stronger ejections, were thrown to a prodigious height, and thence fell on the declivities of the mountain, emitting a great quantity of vivid sparks, and bounding and rolling till they came within a short distance of the place where I stood. These stones, when I afterwards examined them, I found to be only particles of the lava, which had become solid in the air, and taken a globose form. These showers of lava appeared an invincible obstacle to my nearer approach to the volcanic furnace. I did not, however, lose all hope, being encouraged by the following observation. The showers of heated stones, I remarked, did not fall vertically, but all inclined a little to the west. I therefore removed to the east side of Vesuvius, where I could approach nearer to the burning mouth: but a wind suddenly springing up from the west, compelled me to remove, with no little regret, to a greater distance, as the smoke from the mouth of the crater, which before rose in a perpendicular column, was now drifted by the wind to the side on which I stood; so that I soon found myself enveloped in a cloud of smoke abounding with sulphureous vapours, and was obliged hastily to retire down the side of the mountain. Yet though I was thus disappointed of the pleasure of approaching nearer to the edge of the crater, and observing the eruptions more nearly and accurately, many instructive objects were not wanting.'

Concerning that great natural phænomenon, the course of the lava, he observes:

'Pursuing my way to the south, along the declivity of the mountain, I arrived at the part where the lava ran above the ground. Where the stream was broadest, it was twenty-two feet in breadth, and eighteen where narrowest. The length of this torrent was two miles, or nearly so. This stream of lava, when compared with others which have flowed from Vesuvius, and extended to the distance of five or six miles, with a proportionate breadth, must certainly suffer in the comparison; but considered in itself, and especially by a person unaccustomed to such scenes, it cannot but astonish and most power-

fully

fully affect the mind. When I travelled in Switzerland, the impression made upon me by the Glacieres was, I confess, great; to see, in the midst of summer, immense mountains of ice and snow, placed on enormous rocks, and to find myself shake with cold, wrapped up in my pelisse on their frozen cliffs, while in the plain below Nature appeared languid with the extreme heat. But much more forcibly was I affected at the sight of this torrent of lava, which resembled a river of fire. It issued from an aperture excavated in the congealed lava, and took its course towards the south. For thirty or forty paces from its source, it had a red colour, but less ardent than that of the lava which flowed within the cavern I have mentioned above. Through this whole space its surface was filled with tumours which momentarily arose and disappeared. I was able to approach it to within the distance of ten feet; but the heat I felt was extremely great, and almost insupportable, when the air, put in motion, crossed the lava, and blew upon me. When I threw into the torrent pieces of the hardened lava, they left a very slight hollow trace. The sound they produced was like that of one stone striking against another; and they swam, following the motion of the stream. The torrent at first descended down an inclined plane which made an angle of about 45 degrees with the horizon, flowing at the rate of eighteen feet in a minute; but at about the distance of thirty or forty paces from its source, its superficies, cleared from the tumours I have before mentioned, shewed only large flakes of the substance of the lava, of an extremely dull red, which, clashing together, produced a confused sound, and were borne along by the current under them.

'Observing these phenomena with attention, I perceived the cause of this diversity of appearance. The lava, when it issued from the subterranean caverns, began, from the impression of the cold air, to lose its fluidity, so that it yielded less to the stroke of solid bodies. The loss of this principle, however, was not such as to prevent the superficies from flowing. But at length it diminished by the increasing induration; and then, the superficial part of the lava, by the unequal adhesion of its parts, was separated into flakes, which would have remained motionless had they not been borne away by the subjacent matter, which still remained fluid, on account of its not being exposed to the immediate action of the air, in the same manner as water carries on its surface floating flakes of ice.

'Proceeding further, I perceived that the stream was covered, not only with these flakes, but with a great quantity of scoriæ; and the whole mass of these floating matters was carried away by the fluid lava, with unequal velocity, which was small where the declivity was slight, but considerable when it was great. In one place, for ten or twelve feet, the descent was so steep that it differed little from a perpendicular. The lava must therefore be expected there to form a cataract. This it, in fact, did, and no sight could be more curious. When it arrived at the brow of this descent, it fell headlong, forming a large liquid sheet of a pale red, which dashed with a loud noise on the ground below, where the torrent continued its course as before.

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'It appeared to me that it might be expected that, where the channel was narrow, the velocity of the torrent must be increased, and where it was capacious diminished; but I observed that, in proportion as it removed from its source, its progressive motion became slower: and the reason for this is extremely obvious; since the current of melted matter being continually exposed to the cold air, must continually lose some portion of its heat, and, consequently, of its fluidity.

'At length the lava, after having continued its course about two miles, along the declivity of the mountain, stopped, and formed a kind of small lake, but solid, at least on the superficies. Here the fiery redness disappeared; but about two hundred feet higher it was still visible, and more apparent still nearer to its source. From the whole of this lake, strong sulphureous fumes arose, which were likewise to be observed at the sides, where the lava had ceased to flow, but still retained a considerable degree of heat.

'After having written these observations on the lava ejected by Vesuvius, as it appeared from its source to its termination, which I made in company with Dr. Comi Abruzzese, a young student of great promise in medical and physical science, I had an opportunity to read the accounts of former eruptions, as they have been given by men of great abilities, who had observed them on the spot: I mean Dr. Serao, Father Della Torre, M. Deluc, and Sir William Hamilton. I perceive that, in the principal facts, the phenomena I have observed agree with their observations, and that the differences are but few. Thus the torrents of lava which they have described were accompanied with great fumes, and covered with pieces of lava and scoriæ. In like manner the liquid lava received but small impressions from the stroke of solid bodies, and sometimes none. Serao informs us, that the lava of 1737, when struck on the surface with long pointed staves, was found to be so hard that it resounded. According to the observation of Father Della Torre, the thick lava of the eruption of 1754, when raised with long poles, split into pieces. M. Deluc shewed me, some years since, in his private cabinet of Natural History, at Geneva, a piece of Vesuvian lava, of the eruption of 1758, marked with a slight impression, which he made on it, on the spot, while it retained its softness. If this naturalist should ever chance to come to Pavia, I could shew him, in return, in the public Imperial Museum, among the collection of volcanic productions which I have made, a cylinder of lava, 18 inches long, and $5\frac{1}{2}$ thick, which, in one part, has been bent to an angle, while it was half liquid, by the hands of the guide who accompanied me when I visited the eruption I have above described. In the eruption of 1766, likewise, though the lava flowed with surprising velocity, we are told, by Sir William Hamilton, that it received but a very slight impression from some large stones that he threw into it. Father Della Torre has also remarked another phenomenon which I observed, and have described, relative to the effervescence and tumours of the fluid lava.

'But my meeting with the subterranean cavity in which the lava flowed, was a fortunate and singular circumstance, which is not, that

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I know of, mentioned by any one else, because probably it was not seen; since all the descriptions of eruptions which we have, relate solely to currents of lava running over the surface of the ground, exposed to the free action of the air; from the effect of which the lava must soon cool and harden; as appears from the very slight impression made by stones thrown into it, according to all the accounts I have cited, and my own observations. But the narrowness of this cavern, and in some measure its depth, prevented this action of the air; whence I was enabled to observe the lava in a state in which it cannot be seen above the ground, still retaining a great part of its fluidity, as appeared from its from time to time spouting into the air, and from the impressions made on it by the pieces of lava thrown into it. It cannot, therefore, be doubted but it had a much greater degree of fluidity when it boiled up in the Vesuvian furnace; as it must then have been penetrated with a greater quantity of absolute heat, by the action of which its parts must have been more disjoined and separated, and therefore have possessed a greater degree of fluidity and mobility. But I shall adduce still stronger reasons to prove the great fluidity of the lava, when it foams and boils up in its craters, when I come to speak of the volcano of Stromboli. I dwell the longer on this subject, because I know some have denied that the lava is ever fluid, asserting, that it has only the consistence of paste moistened with a good deal of water, and descends down any declivity in consequence of its gravity.

'To complete the observations I have made on this eruption, nothing appears to remain but to speak of the quality of the ejected lava. On this I made different experiments, all of which, some extrinsic or accidental circumstances excepted, furnished the same results. The base of the lava is of horn-stone rock, of a dark-grey colour, of moderate hardness, dry to the touch, where it has been fresh broken somewhat earthy, and gives some sparks with the steel. This lava put the magnetic needle in motion at the distance of three lines and a half, or somewhat more than a quarter of an inch.

'It is well known to volcanic naturalists, that many of the lavas of Vesuvius contain colourless garnets. In that of which I treat, they were found very numerous, though very small. When broken, they appeared glassy; and sometimes a kind of side or face was visible, though without its being possible to determine the quality of the crystallization, not so much from their smallness as from their being too intimately incorporated with their tenacious matrix. With the garnets were united a number of shoerls, of the colour and lustre of asphaltum, vitreous, crystallized in faces, the largest of which was nearly five lines. Those which were found in the running lava had received no injury from the fire; but those in the globes ejected from the crater in that eruption, were in a state of beginning fusion.

'The fire of the furnace changed this lava into a kind of enamel, full of bubbles, of the colour of pitch, shining, which gave sparks with steel, and adhered strongly to the sides of the crucible. The shoerls melted, but the garnets did not; they only became whitish, but without entirely losing their vitreous appearance.'—

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'The greater part of this lava lies in a valley under Massa, and on one side of Salvatore. Before it arrived there, it must have fallen from a high rock, and consequently formed a cataract, which, when seen by night, I was told, exhibited a most wonderful spectacle to the eyes of beholders. But though its fall through the air must have been very considerable, and it must in consequence have lost much of its heat, when it reached the ground it continued still to flow for a considerable space. On the side of Massa, I observed that it had approached within ten or twelve feet of some oaks which grew on the side of a precipice. Some of them appeared entirely withered; others preserved their verdure only on that side of the trunk and branches which was opposite to that next the lava. In its passage it did such damage to a small church called *Madonna della Vetrana*, that it has ever since remained deserted. The fiery torrent took it in front, and broke down the wall, which indeed required no great force, as it was built with soft stones of tufa brought from the neighbouring mountains of Massa, and much like that of Naples. Thence it penetrated into the church, and having destroyed the door on the opposite side, and beat down a part of the wall, continued its course, through the church, within which it was observed to flow with greater velocity than the rest of the surrounding lava, from being confined by the walls on the sides. With this lava the floor of the edifice still continues covered, and the contiguous sacristy partly filled; while large pieces of the broken wall, which the torrent had carried away, lie at more than eighty feet distance from the church, in the middle of the hardened lava.—Some linden trees are likewise to be seen surrounded by the same, the trunks of which are blackened and burnt. The lava, as I was assured, continued to flow fifteen months; and when I visited the place, which was ten months after it had ceased to flow, it was still warm, and emitted thin fumes.'

After having examined the Grotto of Posilipo, the Solfaterra, Ischia, and the Phlegrean fields, the author pursued his journey to Sicily and Mount Ætna. We subjoin the interesting comparison which he draws between that stupendous volcano and Mount Vesuvius:

'Though Vesuvius, considered in itself, may be justly called a grand volcano, and though, from the destruction and calamities it has at various times occasioned, it has continually been an object of consternation and terror to the inhabitants of the neighbouring country; yet when it is compared with Etna it must lose much of its celebrity, and appear so diminished, that, if the expression may be allowed, it may be called a volcano for a cabinet. Vesuvius does not, perhaps, rise higher than a mile above the level of the sea; and the whole circuit of its base, including Ottajano and Somma, is not more than thirty miles; while Mount Etna covers a space of one hundred and eighty, and in its height above the sea considerably exceeds two miles. From the sides of Etna other lesser mountains rise, which are as it were its offspring, and more than one of which equals Vesuvius in size. The most extensive lavas of the latter mountain do not exceed seven miles

miles in length; while those of Etna are fifteen or twenty, and some even thirty miles in extent. The borders of the crater of Mount Etna are never less than a mile in circuit, and, according to the changes to which they are subject, sometimes two or three miles; it is even reported, that in the dreadful eruption of 1669 they were enlarged to six. But the circumference of the Vesuvian crater is never more than half a mile, even when widest distended, in its most destructive conflagrations *. Lastly, the earthquakes occasioned by the two volcanos, their eruptions, showers of ignited stones, and the destruction and desolation they occasion, are all likewise proportionate to their respective dimensions. We cannot therefore wonder that visits to Vesuvius should be considered as undertakings of little consequence, and never be made public, except lavas should have been flowing at the time; while a journey to Etna is considered as no trivial enterprise, both from the difficulty of the way, and the distance; as from Catania, whence it is usual to set out, it is thirty miles to the summit of Etna. On such a journey, likewise, we have to pass through three different climates; whereas to go from Naples to Vesuvius should be rather called an excursion than a journey. We find also little difference between the temperature of the air at the bottom of this latter mountain, and that of its summit. Notwithstanding these difficulties, however, the gigantic majesty of the Sicilian volcano, its sublime elevation, and the extensive, varied, and grand prospects its summit presents, have induced the curious, in every age, to ascend and examine it; and not a few have transmitted to posterity the observations they have made during their arduous journey.'

The Abbàte condemns Mr. Brydone's narrative, as inaccurate in many particulars, and void of science. Of his own unwearied spirit of investigation, we select the following very surprising instance:

'I was not more than a hundred and fifty paces distant from the vertex of the cone, and already beheld close to me, in all their majesty, the two columns of smoke. Anxious to reach the borders of the stupendous gulf, I summoned the little strength I had remaining, to make a last effort, when an unforeseen obstacle, for a moment, cruelly retarded the completion of my ardent wishes. The volcanic craters, which are still burning more or less, are usually surrounded with hot sulphureous acid steams, which issue from their sides, and rise in the air. From these the summit of Etna is not exempt; but the largest of them rose to the west, and I was on the south-east side. Here likewise, four or five streams of smoke arose, from a part somewhat lower; and through these it was necessary to pass; since on one side was a dreadful precipice, and on the other so steep

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'* I know not how M. Sage was led into so strange an error as to assert that *the crater of Vesuvius is more than three miles in diameter.* (Elem. de Min. tom. 1.) Were this true, the circumference of the Vesuvian crater must be nearly ten miles, an extent which perhaps the crater of no volcano in the world ever had.'

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a declivity that I and my companion, from weakness and fatigue, were unable to ascend it; and it was with the utmost difficulty that our two guides made their way up it, notwithstanding they were so much accustomed to such laborious expeditions. We continued our journey, therefore, through the midst of the vapours; but though we ran as fast as the ground and our strength would permit, the sulphureous steams with which they were loaded were extremely offensive, and prejudicial to respiration; and affected me, in particular, so much, that for some moments I was deprived of sense; and found, by experience, how dangerous an undertaking it is to visit volcanic regions infested by such vapours.

'Having passed this place, and recovered by degrees my former presence of mind; in less than an hour I arrived at the utmost summit of Etna, and began to discover the edges of the crater; when our guides, who had preceded me at some distance, turned back, and, hastening towards me, exclaimed in a kind of transport, that I never could have arrived at a more proper time to discover and observe the internal part of this stupendous volcano. The reader will easily conceive, without my attempting to describe it, how great a pleasure I felt at finding my labours and fatigue at length crowned with such complete success. This pleasure was exalted to a kind of rapture, when I had completely reached the spot, and perceived that I might, without danger, contemplate this amazing spectacle. I sat down near the edge of the crater, and remained there two hours, to recover my strength after the fatigues I had undergone in my journey. I viewed with astonishment the configuration of the borders, the internal sides, the form of the immense cavern, its bottom, an aperture which appeared in it, the melted matter which boiled within, and the smoke which ascended from it. The whole of this stupendous scene was distinctly displayed before me; and I shall now proceed to give some description of it, though it will only be possible to present the reader with a very feeble image, as the sight alone can enable him to form ideas at all adequate to objects so grand and astonishing.'

In the city of Catania, the Chevalier Gioeni has formed a museum, in which are some extremely minute shells, in size not exceeding a grain of sand, methodically distributed and placed at the bottom of small tubes; at the other end of which is a lens, by which the peculiarity of the involutions and the variety of colours become perceptible.

The *Second Volume* includes an equally satisfactory account of the Lipari or Æolic Isles, the volcano of Stromboli, &c. abounding in matter alike curious, but in general too diffusely arranged, for such transcription as our limits allow us to make. Lipari is founded on a rock of lava and glass. The Abbàte enters into an examination of the different kinds of pumice stone, and an ingenious conjecture is offered respecting its origin from the Asbestus and Amaranthus. An inquiry is likewise made into the nature of Basaltes, in the *Third Volume;* in which the most

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novel and interesting disquisition is that which examines, by experiments, the nature of the gases of volcanos, and the true causes of their eruptions.

The *Fourth Volume* contains a recapitulation of arguments for the establishment of various hypotheses. Arriving afterward at Messina, the author describes with great interest the calamitous accidents which have befallen that ill-fated city, especially at the earthquake in 1783.

'When I travelled in those parts, the dreadful effects of the earthquake of 1783 were the common subject of discourse. On my entering, in the felucca, the Strait of Messina, some of the people who were with me pointed out to me the shore of Scilla where a great number of people were drowned at that calamitous time. A dreadful shock of an earthquake took place, about noon, on the 15th of February of the above year, which terrifying the people of Scilla, they fled in crowds to the shore, when, about eight o'clock the following night, according to the Italian reckoning *, another violent shock succeeded, in which the waves rose so high that they covered the whole shore, and out of more than a thousand persons who were there collected, among whom was the Prince of Scilla himself, not one escaped to relate and mourn the fate of the rest. The furious waves, rushing into the strait, penetrated to the harbour of Messina, and nearly sunk the vessels there at anchor.

'When I arrived opposite to the city, I began to see the fatal and ruinous effects of this dreadful earthquake. The curvature of the harbour was formerly embellished, for the extent of more than a mile, with a continued range of superb palaces, three stories in height, usually called the *Palazzata*, inhabited by merchants and other persons of opulence, which formed a kind of superb amphitheatre. The upper story, and a part of the second, of these buildings, were entirely thrown down, the lower greatly torn and damaged, and the whole of this extensive pile deserted by its inhabitants.

'When I entered the city, every object which met my view tended to awaken melancholy sentiments and commiseration. Excepting some of the wider and more frequented streets, the rest were all heaps of ruins, either piled up on each side, or scattered in the middle, and rendering it impossible to pass them. Many of the houses were still in the same ruinous state in which they had been left by the earthquake; some entirely destroyed and levelled with the ground, others half thrown down, and others still standing, or rather hanging in the air, merely from the support afforded by the ruins around them. Those which had escaped this destruction appeared as if preserved by a miracle, torn and rent as they were. The cathedral was among the number of these fortunate edifices. This is a spacious building, of gothic architecture. Its interior has suffered little or no damage. It is embellished with a number of columns of granite brought from an ancient Grecian temple, which once stood on the Faro (or Strait of Messina), and with elegant Mosaic work wrought with the most beautiful jaspers of Sicily.

'* About one in the morning.'

'The

'The destruction of so great a number of houses as were thrown down by this dreadful earthquake obliged the people of Messina to take refuge in wooden sheds built for the occasion, many of which were still standing when I was there. They had begun, however, to rebuild the houses, but on a different plan from the old ones. They had observed that the highest had suffered most, and that, in the violent shocks of the earthquake, the beams, by continually and forcibly beating against the walls, had completed the ruin of the edifice. They therefore resolved to build them lower, and to construct the wood-work in such a manner, that, in case of a similar visitation, the shock should be sustained by the whole of the building, and not by a part only. This precaution, it is evident, must be of the greatest utility, should the city again suffer a calamity of this nature.

'Though it was now nearly the sixth year since that dreadful disaster, considerable remains of the dread, consternation, and, I may say, stupefaction, which usually accompany great terrors, were still manifest in the minds of the people of Messina. They had still present in their memory all the circumstances of that dreadful time; nor could I listen to the narrative they gave of them without shuddering.'

Of Scylla and Charybdis, we are gratified by a scientific account; as also by a very ingenious piece of natural history respecting the *phosphorescent medusæ* observed in the Straits of Messina. The Coral fishery, and that of the sword-fish and sea-dog, (a species of shark,) are the concluding particulars of these very valuable volumes.

From this praise of the original work, we must subtract something when speaking of its English appearance. Though the translation is faithful, it is seldom elegant; and though the plates are copied with exactness from those in the original publication, still they afford a very imperfect elucidation.

Dall...y.

ART. VI. *On the Syntax of the Latin Verb:* designed for the Use of Students. By Samuel Seyer, M. A. of Corpus Christi College, Oxford. 8vo. pp. 339. 5s. Boards. Cadell jun. and Davies. 1798.

FROM the author's advertisement, we learn that this volume is only a small part of what was intended to be *an entire* Grammar of the Latin Language: which, if the present work should meet with public approbation, he still designs to accomplish.—We have no doubt that this specimen will be well received by the public; and that a prosecution of the plan will be attended with much advantage to the student who wishes to acquire a correct Latin style, or even to enter into the just meaning of Latin authors.

The work is divided into 27 chapters. The first contains only a definition of the Indicative Mood; which 'signifies that

something is affirmed or denied: as, *Nos patriam fugimus.—Nunquam omnes hodie moriemur inulti.* It is also used in interrogative sentences; sometimes with, and sometimes without, certain interrogative words, as *an, num,*' &c.

Chap. II. treats on the Present Tense of the Indicative Mood; which, according to Mr. S. signifies, 1. The action now going on, but not yet finished: as *Teipsum quæro.* 2. The custom of doing any thing, if the custom be still in being: as, *Scribimus indocti, doctique.* 3. It is frequently used as a more animated way of expressing past time; as *Vulnus alit venis*, &c. *Dum hæc geruntur.* 4. There are instances in which a future signification may be expressed by the Present Tense: *Quæ prima pericula vito.* All these are amply exemplified by the author, both from prose and poetry.

Chap. III. The Preterimperfect speaks, 1. of an action as passing, but not finished, at some time past; as, *Ibam fortè viâ sacrâ.*—2. The custom of doing any thing in time past, as, *In hora sæpe ducentos, ut magnum, versus dictabat.*—3. In some cases it is equivalent to our English Preterite (*he wrote*), and in such cases the Latin Preterperfect would be equally admissible.—4. It is frequently found instead of the Preterimperfect Subjunctive; as, *anceps certamen equestre erat, ni equites supervenissent.*—5. The word *erat*, with a Noun, seems sometimes to be used instead of *est. Sed nunc non erat his locus* *.

Chap. IV. Of the Preterperfect Tense; which is, 1. The proper indefinite Aorist (*I wrote*); as, *Orationem hujusmodi habuit;—Conticuere omnes.*—2. It is used in that sense which in Greek would be expressed by the Παρακείμενος; as, *Si tales animos in prælio habebitis, quales hic ostenditis, vicimus.*—3. It is sometimes used in a sense peculiarly indefinite; to signify an action of universal time, past, present, and to come; as, *Pax aluit vites et succos condidit uvæ.* 4. It is poetically used in a conditional sense, instead of the Preterimperfect or Preterpluperfect Subjunctive; as, *Nec veni, nisi fata locum sedemque dedissent.—Primam merui qui laude coronam; ni me quæ Salium, fortuna inimica tulisset.*—5. *Odi, memini, novi*, and sometimes *cæpi*, have the signification of the Present Tense; and, consequently, the Preterpluperfect *noveram*, &c. have the sense of the Preterperfect, and the Future Perfect *novero*, &c. the sense of the simple Future.

6. 'In writing letters, it is usual to use † those verbs in the Preterperfect Tense, which express the present writing.'—*Hæc*

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* We think that *erat* in this example is not put instead of *est*: but that *nunc* is here equivalent to *tunc*. The other examples, particularly *Nunc est bibendum*, &c. are more to the purpose.

† *It is usual to use* appears to us an *unusual* phrase.

festinans

festinans scripsi in itinere atque agmine.—If the time is to be represented as passing, the Preterimperfect is used. *Cum hæc scribebam, censorem jam te esse sperabam.*—If a former Letter be mentioned, the Preterpluperfect is used. *Dederam triduo antè literas ad te, eò nunc ero brevior.*—These rules are not always observed. 7. In verbs in *or*, this tense is double; *amatus sum* or *fui*: where *amatus sum* is a real past Tense, notwithstanding the appearance of *sum* in the Present.

So far we have given the author's rules and exceptions chiefly in his own words:—but we shall now content ourselves with giving a very brief notice of the contents of each chapter.—Three useful lists next occur,—1st, Of examples in which *amatus sum* is used to signify the Past aorist.—2dly, Examples in which *amatus sum* is used to signify the παρακείμενος of the Greeks.—3dly, Sentences in which *fuit* is joined to a Participle Perfect.

Chap. v. lays down rules for the use of the Preterpluperfect Tense Indicative, illustrated by proper examples.

Chap. vi. treats on the Future Tense Indicative.

Chap. vii. Of the Future Perfect Tense Indicative: which signifies not merely that an action is future, but that at some future time it will be past. *Ero securior, dum legam; statimque timebo, cum legero.*—It is often best translated into English by the simple Future.

Chap. viii. The author here takes notice of a *particular* use of the Present and Preterimperfect Tenses. When any action is mentioned as having continued for some time and still continuing, the verb must be in the Present Tense, when in English we use the Preterperfect; and in the Preterimperfect Tense, when in English we use the Preterpluperfect. *Plus jam sum libera quinquennium:* which in English would be expressed: *I have now been free more than five years* *.

In Chap. ix. Mr. S. treats on the Tenses of the English Verb, in order to shew 'how defective the Latin language is in its Tenses.' Here we do not altogether agree with him.

In Chap. x. he returns to the Imperative Mood and its Tenses.

From Chap. xi. to Chap. xviii. inclusively, he treats copiously on the different Tenses of the Subjunctive Mood; and in Chap xix. which is a long and important one, he gives an accurate list of the various particles which require the Subjunctive Mood after them; with the exceptions to which many of

* We are not sure that we might not use the Latin mode of phrasing with great propriety. The French say, *Je suis libre il y a plus de cinq ans.*

them are liable. Every composer in Latin ought to read this chapter with attention.

Chap. xx. treats on the signification of the Infinitive Mood; and

Chap. xxi. Of its peculiar Syntax.

Chap. xxii. contains a list of Verbs which admit, after them, *ut*, *ne*, *quo*, *quin*, *quod*; in an alphabetical order: with a shorter list of verbs, after which *ut* may be omitted.

Chap. xxiii. and xxiv. treat of Gerunds and Supines.

Chap. xxv. Of Participles.

Chap. xxvi. Of Verbs impersonal.

Chap. xxvii. and last, Of the various kinds of Verbs.

The volume concludes with four useful Tables; 1. A list of Verbs which are used both as *active* and *neuter*. 2. A list of Deponent Verbs; which use the voice in *o*, in the same sense. 3. A list of Verbs *passive*, used as *deponents*. 4. A list of Verbs in *or*, which are used both as *active* and *passive*.

We strongly recommend this publication to every Latin student, and hope that the ingenious author will be encouraged to give his entire work.

Ged.-s.

Art. VII. *The Nurse*, a Poem. Translated from the Italian of Luigi Tansillo. By William Roscoe. 4to. pp. 94. 6s. Boards. Cadell jun. and Davies. 1798.

Having received so much pleasure from Mr. Roscoe's translations in his celebrated *Life of Lorenzo de' Medici* *, we rejoiced to find that he had employed his leisure hours in furnishing the females of our country with the version of a work, which, though little known in England, even by those who are best acquainted with Italian literature, is written on a subject of the utmost importance to humanity.

Tansillo, the author of the original Poem, was a native of Nola in the kingdom of Naples. Born about 1510, and dying in 1569, he may be truly said to have flourished during the most illustrious period of Italian poetry and the Italian language: but his profession being that of arms, under the banners of Spain, (which was then in possession of the kingdom of Naples,) he may be regarded as a *Dilettante* in literature and in the service of the Muses, rather than as an author by trade.

We shall present our readers with the translator's account of the poem, previously to the consideration of the work itself:

'With respect to the poem, of which an English translation is now attempted, it may certainly be considered (says Mr. R.) as a

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* See M. Rev. vol. xx. and xxi. N. S.

singular

singular and interesting production. As the work of one of the brightest wits in that constellation of Genius which appeared in Italy in the sixteenth century, and which yet diffuses a permanent light over the horizon of literature, it is worth notice and consideration. Contemporary with Ariosto, with Bembo, with Casa, and with the two Tassos, Tansillo was not perhaps inferior to any writer of his time in the simplicity of his diction, the elegance of his taste, or a strict adherence to nature and to truth. But independent of the merit which the poem may be presumed to possess from the acknowledged character of the author, it will be found on examination to contain within itself sufficient claims to the approbation of the admirers of Italian poetry. The subject is in a high degree interesting, and is treated in a manner peculiarly pointed and direct, yet without violating that decorum which is due to the public at large, and in particular to the sex to whom it is addressed. To those who feel the laudable curiosity, and acknowledge the utility of comparing the manners of different ages, it will afford many striking indications of the state of society at the period in which it was written, and will tend to shew, that the ideas and feelings of mankind on all subjects of general concern, are much less liable to variation from the diversity of time and place, than is frequently supposed. Such is the coincidence between the state of manners in Italy in the sixteenth century, and in England in the eighteenth, that the translator, though intending to accommodate the poem to modern times, has seldom found it expedient to vary from the original in the slightest degree; and if he has not wholly failed in his purpose, he thinks it will appear that it would be difficult even in the present day to adduce arguments more pointedly directed than those of the author against the abuse which it was his purpose to reform.

'It is not the translator's intention to assert, that a previous consideration of these circumstances led him to undertake the present version of the poem. The truth is, that having of late enjoyed a greater share of leisure than he has formerly experienced, he has employed some part of it pleasantly to himself, if not usefully to others, in an occupation, which without requiring the exertion of original composition, satisfies the *besoin d' agir*, and by calming the reproaches, allays the irritation of total indolence. He must also be allowed to observe, that the hope of promoting in some degree the laudable object which the author himself had in view, if it did not lead him to undertake the translation, operated as a chief inducement to lay it before the public. That the character and manners of our countrymen, both in higher and lower life, affords but too much room for reform, is an assertion which may be made without incurring the imputation of moroseness; but till we can decidedly point out those circumstances which give rise to this laxity, not to say depravity of manners of the present day, it will be to no purpose to adopt measures for their improvement. Of these causes the custom, still so prevalent, of committing the children of the richer and middle ranks of society to be brought up by the poor, is, in the opinion of the translator, one of the most efficacious, and like all other vicious institutions, its effects are injurious to all the parties who engage in it. The

reason generally assigned by medical men for promoting a custom which has of late received their almost universal sanction, is, that the mode of living which now prevails in the higher ranks, is such, as renders it impossible for a woman to afford her infant those advantages which are indispensably necessary to its existence and support. But is it possible to conceive a severer satire against the female sex than this assertion implies? Such it seems is the rage for pleasure and amusement, that it must be gratified even by the sacrifice of the most important duties of life, and by a practice, which, if generally extended, would endanger the very existence of the human race. The assistance of a nurse is not then intended as a benefit to the child, but as a licence to the mother to pursue her gratifications, without those restraints which the performance of her own proper and indispensible duties would impose upon her, and by the due exercise of which she would find her health and her affections equally improved.'

This translation is addressed, with great propriety, to Mrs. Roscoe, in the following sonnet; by which it appears that Mr. R. joins to the knowlege and precepts of Tansillo, his own domestic experience of their efficacy.

'As thus in calm domestic leisure blest,
I wake to BRITISH notes the AUSONIAN strings,
Be thine the strain; for what the poet sings
Has the chaste tenor of thy life exprest.
And whilst delighted, to thy willing breast,
With rosy lip thy smiling infant clings,
Pleas'd I reflect, that from those healthful springs
—Ah not by thee with niggard love repress—
Six sons successive, and, thy later care,
Two daughters fair, have drank; for this be thine
Those best delights approving conscience knows,
And whilst thy days with cloudless suns decline,
May filial love thy evening couch prepare,
And sooth thy latest hours to soft repose.

W. R.'

No work could require more delicacy of expression to render it fit for the public eye, and inviting to the fair readers whom it most concerns;—and we have great pleasure in observing that Mr. Roscoe, without enfeebling the force of the original ideas, has had the address to clothe the sentiments, descriptions, and censures of maternal neglect and want of natural affection, in language so delicate, that we might read it aloud to an assembly of females, without calling a blush to the cheek of the most angelic innocence and purity. It is, however, but just to our countrywomen to own, that the custom of denying to infants the nourishment which nature intended for them is more seldom practised than formerly. We know that instances might be given of personages of the highest rank and beauty sacrificing ease, pleasure, and public admiration, in order to perform

in person the first and most important duty of a nurse; and we have great reason for believing that, frequently when the mother has relinquished this duty, it has been caused more by the persuasion of others, and by a total ignorance of the fatal consequences which may arise to themselves as well as to their offspring by transferring the task to a substitute, than by a want of natural affection.—Two terrific dangers are often suggested to them at the beginning of their maternal state: Infringement of Liberty, and Diminution of Beauty and Attractions;—without ever reminding them of the still greater danger to both from the consequences of attempting to counteract the laws of nature.

The author of this production has so plainly and scientifically explained the fatal effects to which the mother is exposed, as well as the child, by employing hireling nurses; and his information and precepts are expressed with such elegance and energy in the translation; that we cannot but regard its appearance in our language, with such advantages, as likely to become a public and national benefit.

The poem consists of two cantos. The exordium of the first, with which we shall present our readers, will impress them with a favourable opinion of the beauty, force, and utility of the rest.

'Accomplish'd Dames, whose soft consenting minds
The rosy chain of willing Hymen binds!
If e'er one prouder wish my bosom felt
By magic strains the listening soul to melt,
(Mov'd by such strains the woodlands Orpheus drew,)
That wish inspires me whilst I sing to you.
—What though the pleasing bonds no more I prove;
I own your charms, nor e'er shall cease to love;
Not with such love as feeds a wanton flame,
—Attended close by penitence and shame!
But Love, that seeks by nobler arts to please,
True to your honour, happiness, and ease.

'Light were my task, if every gentle breast
Own'd the just laws of native truth imprest;
For not by hopes of vain applause misled,
In reason's injur'd cause alone I plead.
'Tis yours to judge; nor I that judgment fear,
If truth be sacred and if virtue dear.'

After having described, with more delicacy than in the original, the sufferings which a mother endures with patience during the period of gestation, the translation presents us with these charming lines:

'But when reliev'd from danger and alarms,
The perfect offspring leaps into her arms,

Turns to a mother's face its asking eyes,
And begs for pity by its tender cries;
Then, whilst young life its opening powers expands,
And the meek infant spreads its searching hands,
Scents the pure milk-drops as they slow distill,
And thence anticipates the plenteous rill,
From her first grasp the smiling babe she flings,
Whilst pride and folly seal the gushing springs;
Hopeful that pity can by her be shewn,
Who for another's offspring quits her own.'

To ladies who seem to love their lap-dogs better than their children, the author is not very partial:

'Yon favorite lap-dog that your steps attends,
Peru, or Spain, or either India sends.
What fears ye feel, as slow ye take your way,
Lest from its path the minion chance to stray!
At home on cushions pillow'd deep he lies,
And silken slumbers veil his wakeful eyes;
Or still more favoured, on your snowy breast
He drinks your fragrant breath, and sinks to rest;
Whilst your young babe, that from its mother's side
No threats should sever, and no force divide,
In hapless hour is banish'd far aloof
Not only from your breast—but from your roof,'

After having pointed out the evils which spring from the contamination of blood, by the food drawn from corrupted sources, Tansillo thus happily concludes the first Canto:

'——— O sun of truth appear,
From error's gloom the female mind to clear!
Shades of false honour, darker mists of pride,
Touch'd by the beam ethereal quick subside.
Self-love his long prescriptive rule foregoes,
And every feature with THE MOTHER glows.
Enough, ye fair, the dread neglect has cost,
The ills experienced, and the pleasures lost;
Yet ah forgive the bard, whose venturous strain
Has dared to give your gentle breasts a pain.'

In the second period of Canto II. the author thus manifests his zeal, tenderness, and benevolent wishes for the happiness of his fair pupils:

'Ah yet, ye fair, shall come that happier day
When love maternal shall assert her sway,
And crowning every joy of married life,
Join the fond mother to the faithful wife;
When every female heart her rule shall own,
From the straw cottage to the splendid throne;
Nor e'er for aught that fortune can bestow,
A mother's sacred privilege forego.

And

And may the fates, ye fair, your years prolong,
To see accomplish'd all your poet's song.'

The effects of infantine attractions on an affectionate nurse, when luckily found, are thus expressed:

' 'Twas nature's purpose, that the human race
Should, with the circling lapse of years, increase;
And well her kind providing cares foresaw
Your dread infringement of her primal law;
Hence to the babe she gave endearing wiles,
Resistless blandishments, and artless smiles,
That from your arms, unfeeling mothers, thrown,
Some softer breast the tender pledge might own;
Fulfil th' important task by you betray'd,
And find the generous labour well repaid.'

What Mother can part with her infant, after having perused the following lines?

' That piercing shriek, from anguish keen that flows,
Disturbs no distant mother's bland repose;
Those looks, that speak the inmost soul, impart
No kindred feelings to a mother's heart;
Not her's the prompt and interposing arm
When dangers threaten, or when fears alarm;
Alike to her whate'er her child sustains,
Its smiles, or tears, its pleasures, or its pains.'

The author has described the unreasonable demands, the insolence, impertinence, selfishness, insatiable appetites and avarice, obstinacy, and want of feeling, of hireling nurses, taken into a house as inmates, in colours so strong, that we hope and believe that the picture is overcharged for this country, however it may have resembled Italian wet-nurses more than 200 years ago. Indeed, the English translator has candidly and humanely enumerated, in a note, the hardships which frequently befall a nurse, when obliged, for a maintenance, to quit her home and her child, and to transfer all her care and affection to the offspring of a capricious, tyrannical, and unfeeling mother: jealous, if the child smiles on the nurse during its repast; and suspicious, if it cries, that it is neglected, ill fed, or cruelly treated.

This admirably moral and didactic poem is terminated by injunctions which maternal feelings, in a well-framed mind, surely cannot resit:

' ——— By duty led, ye nuptial fair,
Let the sweet office be your constant care.
With peace and health in humblest station blest,
Give to the smiling babe the fostering breast;
Nor if by prosperous fortune placed on high,
Think aught superior to the dear employ.'—

' And

'And you, whose hearts with gentle pity warm,
Pure joys can please and genuine pleasures charm,
Clasp your fair nurslings to your breasts of snow,
And give the sweet salubrious streams to flow,
Let kind affections sway without controul,
And thro' the milk-stream pour the feeling soul.
—What tho' th' inveterate crime, the dire disgrace,
From elder years to modern times we trace,
Nor earthly laws its wasteful rage restrain,
Be yours the task to break the wizard chain;
So shall the glorious deed your sex inspire,
All earth applaud you, and all heaven admire.

'O happier times, to truth and virtue dear.
Roll swiftly on! O golden days appear!
Of noble birth, when every matron dame,
Shall the high meed of female merit claim;
Then loveliest, when her babe in native charms
Hangs on her breast or dances in her arms,
Thus late with angel grace along the plain,
Illustrious DEVON led Britannia's train;
And whilst by frigid fashion unreprest,
She to chaste transports open'd all her breast,
Joy'd her lov'd babe its playful hands to twine
Round her fair neck, or midst her locks divine,
And from the fount with every grace imbued,
Drank heavenly nectar, not terrestrial food.'

Mr. Roscoe has here very judiciously omitted the names of some illustrious Italian ladies, whom Tansillo wished to convert to his doctrines, and has paid a well-turned compliment to the Duchess of Devonshire; who disdained not to perform the task of fostering her own offspring, and to furnish an example of maternal tenderness to the most beautiful and high-born females of our country.

We have been so pleased with the subject of this poem, and with the manner in which it has been treated, and so gratified by the elegance and accuracy of the translation; that we began to think, as PRAISE and BLAME, with the reasons for both, comprehend the whole office of a critic, that here only one half of that duty would be performed; and that we should have no opportunity of manifesting perspicacity in detecting errors, though indulged with so many of pointing out beauties. We are indeed reduced to the meanest part of our employment, by becoming "word catchers, who live on syllables," and have nothing left with which to feed our severity except a few unwarrantable rhymes, to which a provincial pronunciation seems to have given birth. We must however point out some of them; hoping that the author of this excellent translation will, in a future edition, deem the following defective rhymes worthy

of

of reformation. A few of them seem of Irish extraction, but we can easily trace the rest from the colloquial dialect of Cheshire and Lancashire:

Canto I.		Canto II.	
P. 5.	misled—plead.	P. 33.	ear—bear.
13.	denies—destroys.	57.	wait—cheat.
ib.	shares—rears.	ib.	noise—cries.
19.	beak—take,	ib.	feast—taste.
29.	disease—days.	63.	sense—innocence.
		ib.	high—employ.

We cannot close this article without observing that the book, printed at Liverpool, furnishes a pleasing example of the improved state of our typography: for, though issuing from a provincial press, we have seen few publications which can boast more beauty of type, paper, or accuracy of text. If any thing be left to wish in a work so well edited, it is that the translation should correspond more exactly with the arrangement of the original text, for the convenience of collation.

D.r B....y.

ART. VIII. *An Essay on the Gout*, in which is introduced a candid Examination, and a Refutation attempted, of Dr. Latham's Principles, lately published on this Subject: and others advanced, deduced from Facts occurring in the Author's own Case, and from his practical Experience of many Years. By George Wallis, M. D. 8vo. pp. 203. 4s. sewed. Robinsons. 1798.

THE work of Dr. Latham, which is here examined, was reviewed in our 22d volume, N.S. p. 348. The opinion stated by him is that the seat both of the rheumatism and gout is "in the exquisitely fine and slender radicles of the lymphatic vessels."—In contradiction of this doctrine, the present writer argues that

'The lymphatic system is a system of itself, independent of either that of the arteries or veins; that it originates from the surface of the machine, and every cavity of the body, however minute, and takes up its fluid from those surfaces, which it conveys by means of its irritability, elastic power, and the influence it receives from the nervous system, to parts of the machine for which it is by nature destined.

'Now what particular effects are we to suppose to be produced in the minute part of this system to occasion those symptoms by which the Gout is manifested? From the reasoning of which the Doctor has made use, it must be obstruction of the lymphatic system. The Doctor has shewn, it is true, that obstruction in that system will occasion pain, distension, and turgescence in the parts below that obstruction, whether caused by indurated glands, or the loss of parts of the system itself, which prevent the fluids from being carried sufficiently quickly through the course of circulation; but the obstruction formed

in

in the Gout is confined to the most minute radicles of the lymphatics; consequently, in the more superior parts, no such obstructions can take place, because the sources, from whence the lymphatic system is supplied, are blocked up; and then, under these circumstances, there would rather be a defect than superabundance of fluids; consequently, pain and distension could not be produced, as the former he allows to be the result of the latter.

'But suppose obstruction to take place in these radicles, the streams which supply fluids for the inhalant vessels would be superabundant; and as they could not be absorbed, the exhalant might experience the effect, which is more likely, agreeably to the Doctor's own position.'

Leaving these disputes, however, we shall give Dr. Wallis's history of the first fit of gout which attacked himself, and which he considers as a simple fit occurring in a good constitution:

'At the onset, I found myself oppressed with a general languor and lassitude; fatigued with trifling exercise, and experienced a debility through the whole of my system, attended with slight chills, sometimes succeeded by flushing heats; my pulse was frequent, yet languid; my appetite impaired, not relishing with any pleasure my food, be it of what nature it would; though I rather gave the preference to that of the mild insipid kind, than made dishes, so called, or highly seasoned viands; my tongue was slightly furred, without any increase of thirst; upon eating any thing, there came on a load and heaviness at my stomach; and I had frequently a rumbling of wind in my bowels, with an uneasy sensation of fulness; my habit was costive, and *sordes alvi ejecta fuit glutinosa, et coloris potiùs subalbidi;* my urine, at first very pale, soon became high-coloured, and much less in quantity; my skin was dry; and though I have a natural propensity to perspire freely in bed at night, at this time I had no such appearance; my sleep was unpleasant and unrefreshing, and now and then I felt oppressed, when laid on my back, though in a slight degree, with what is called the night-mare; my dreams were of the frightful, sometimes horrid kind; my hearing was not so acute as natural to me, and in my ears I had often a sensation similar to the sound from the stroke upon a bell, whilst objects at a small distance appeared to me as if enveloped in a slight mist.

'In this situation I remained for some days, about a week; towards the close of which, I felt a pain in the centre of the thick bulbous part, called the ball of the great toe, in my right foot, which I thought originated from a sharp pebble that had got into my shoe, and insinuated itself under that part; it had that feel exactly; this pain continued to teaze me for three days, and now and then, in particular positions of my foot, as I walked, was very acute, though transitory.

'My medical friends, with whom I at that time associated, considered my complaint as the attack of a slow fever, brought on by close application to study, and living too low, in proportion to the exercise I took. In this opinion I was willing to coincide, more pro-

bably from fear than reflection; for of this disease I always had a horrid dread; the severe sufferings of my father for many years from the Gout, had left such a painful impression on my mind, as neither philosophy nor medical confidence could conquer.

'However, I was soon relieved from this state of error; for, early on the fourth morning, I was wakened with the most excruciating pain in my toe and foot, infinitely superior to any thing I had ever experienced; most acute in the central point of which I first complained. But notwithstanding my pain in those parts was so much increased, I found the whole of the general symptoms, with which I was first affected, greatly alleviated, and many of them totally gone; the chief of what remained were a load at my stomach after eating, fulness of the intestinal canal from flatulence, and costiveness.

'In a little time my foot began to swell, and continued to increase for some days, having a highly inflammatory appearance, a bright polished redness on the surface of the skin, and at the same time the parts all around it were œdematous. After this the pain began gradually to decrease, gentle general perspiration came on every evening, and an increased moisture on the diseased foot; but in the joint of the great toe, and great part of the metatarsal, or small bones of the foot, at their junctures, there remained for some time great debility. which again recovered their usual strength by very slow degrees; for, from the beginning of the fit to my being perfectly re-established, six weeks had elapsed.

'I should have observed, that, before the attack, I enjoyed my usual state of good health.'

On this history Dr. Wallis thus remarks:

'After attentively considering the whole of the symptoms, tracing their progression from the onset to the termination, and then taking them collectively, I was by no means satisfied with any former opinions I had read concerning the Gout, much less with the general mode of cure recommended in this disease, particularly in cases constitutionally similar to my own. The symptoms which preceded the painful paroxysm, or the pain itself, appeared not to be of the inflammatory kind, though external inflammation was the common consequence, but much more forcibly to be affections of the nervous system. I would be understood here, from the beginning, to that perceptible alteration of my pain (see pages 35 to 41[s]); for here I consider the real gouty fit concludes.'

Considering the Gout as being a nervous affection, Dr. Wallis proceeds to account for the presence of 'its characteristic symptom, Pain.' This, he tells us, 'is occasioned by stimulus in the first instant; spasm, soon after; and distension, still later.' We are afterward informed 'that this stimulus depends upon some acrimony deposited on the nervous fibrillæ of the part affected, separated from the mass of fluids; which acrimony we call arthritic.' To our ears, an equal degree of information would be conveyed, if we were told that the cause of gout was a gouty cause!—On this subject, the Doctor must excuse

excuse us if we remind him of a paragraph in his own book, which runs thus: 'To men who are content with words, and are polite or partial enough to sacrifice common sense at the shrine of superstitious credulity, such language may carry with it an air of plausibility; but not to men who can or dare use their reasoning faculties.'

With respect to the cure, Dr. Wallis recommends, on the approach of the disease, a purgative to be given; and, on the following day, an emetic of the antimonial kind. On the attack of pain, he prescribes *patience*, flannel, and saline mixture, or whatever else may tend to promote a gentle perspiration; and afterward, if necessary, some of the strengthening aromatic bitters, with preparations of steel.

Some useful rules are also laid down as to the regimen necessary to be observed by persons actually labouring under gouty complaints; as well as by those who are occasionally liable to this disease: but for these we must refer to the publication.

On the whole, though our knowlege of the cause of gout is not increased by this essay; and though nothing that is either very new or very efficacious is added to the common mode of treatment; yet many of the observations here presented to us are judicious, and deserve applause. O.

Art. IX. *A Third Dissertation on Fever.* Part I. Containing the History and Method of Treatment of a regular continued Fever, supposing it is left to pursue its ordinary Course. By George Fordyce, M. D. F. R. S. 8vo. pp. 260. 4s. sewed. Johnson. 1798.

To this continuation of his treatise on fever *, Dr. Fordyce has prefixed the celebrated passage from the thirty-fifth canto of the *Orlando Furioso*, in which Ariosto has founded a beautiful allegory on the difficulty of acquiring fame. The Doctor has no inconsiderable claim to the offices of the *sacred swans*, which are said, by the poet, to rescue favoured names from the stream of oblivion; and if Reviewers can be supposed to share in so exalted a duty, he will escape the fate which has so often engulphed

"*De' ricchi nomi la memoria degna.*"

In this division of his work, the author first distinguishes that disease which is properly termed a regular continued fever, from other disorders that have been confounded with it. One

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* See Rev. N. S. vol. xxi. p. 91.

criterion

criterion of this fever, he observes, is that it increases for a certain time from its beginning; remains for some time at its height; then, without any apparent cause, gradually diminishes; and terminates in health. Otherwise, a crisis takes place during its progress, and carries off the disease; or the crisis converts it into an intermittent; or, in its progress, it produces topical inflammation; or it kills the patient. He applies this definition to a variety of cases, which might be confounded with fever by superficial observers,—but which differ from it, in his opinion, because they depend, for their continuance, on the constant action of their exciting cause; as in the instances of Gout, Rheumatism, Phlegmon, or Erysipelas.

In those febrile cases in which a pleuritic affection arises, and carries off the fever, he supposes that an ephemera had taken place in the first instance: but, when the fever continues, after the removal of the intervening pleurisy, he thinks that a regular fever had first occurred, which had been only diminished, not cured, by the pleurisy; and which therefore must run its course, after the removal of the topical inflammation.

We pay great deference to the author's opinions: but, in the present instance, we think that he has assumed too much. If a pleurisy does not always cure a general fever, it may be explained from many other causes than those assigned by Dr. F. Much depends on the degree and the duration of the inflammatory symptoms: they may take place to an extent sufficient only to palliate, not to cure, the disease of the general system. Much, also, depends on the method of cure adopted for the removal of the topical disease. Dr. Fordyce ought to prove that a general fever cannot be extinguished by partial inflammation, if this supposition be necessary to his system: but, instead of producing proof, he only asserts the necessity of making nice discriminations. Above all things, it is requisite that distinctions should be true; and in this instance, we think that he has by no means established his position.

To shew the difference between general inflammation and fever, the author has introduced an account of the practice of exhibiting Peruvian bark, during the continuance of acute rheumatism. We shall extract this passage; because many of our readers, at a distance from the metropolis, may wish to acquire a distinct idea of a method which has created some wonder, but has been little understood.

'When rheumatism excites general inflammation, the general inflammation frequently appears to be the principal disease; and until lately practitioners have thought it ought to be carried off by large evacuations, especially by bleeding. Dr. Hugh Smith, an extraordinary

dinary practitioner, conceived that the evening attacks of violent pain, frequently happening in acute rheumatism, were the returns of the paroxysms of an intermittent. He therefore exhibited the bark of the cinchona, in the quantity of an ounce and an half, during the interval of the pain, although the pulse continued hard, full, strong and frequent, and thus succeeded in preventing the return of the pain. This practice has since been adopted with success by many practitioners. Some have even employed the bark of the cinchona in acute rheumatism, where there was no remission of pain, but in the cases the author has seen, without effect. While it was the practice to remove the general inflammation by bleeding, metastasis frequently took place to the interior parts of the body, and destroyed the patient. This accident in the author's practice during the last fifteen years has rarely happened. In this period he has entirely left off bleeding in acute rheumatism; and has not lost above two or three patients, although he has treated several hundreds in this disease. This may be considered as a digression; but it is intended to shew, that general inflammation, in this case, has nothing in its treatment similar to fever.'

We observe nothing particularly new, or striking, in the author's theory of sleep. He supposes it to be an interval of rest which is equally necessary for repairing both mental and muscular fatigue; and that, during its continuance, some powers of the mind are more especially in a state of rest:—but he does not attempt to explain why only the organs of voluntary motion require intervals of repose, while the involuntary actions are continued without fatigue. The comparison of the human system to an hydraulic machine, which extends through several pages, serves to illustrate, but does not in any respect explain, these obscure phænomena.

In the general history of the paroxysm of continued fever, and in accounting for its return, the author follows the outlines of Dr. Cullen; though his peculiar mode of expression, which resembles the diffuseness of an extemporaneous lecture, may convey to the student an impression of originality.

Dr. Fordyce has given, at considerable length, his sentiments on the putrefaction of the fluids, which has been supposed sometimes to take place in fevers. He thinks that this occurrence is always an effect of the depression of strength which the fever produces.—He next enters into the distinction between delirium and mania; and he takes occasion to observe that he has never seen suppuration in the brain, on opening patients who have died delirious. He seems to think it possible, (p. 104,) that delirium may arise in fever as an affection of the mind only, independently of any affection of the material part of the body. Another species of delirium he believes to depend on congestion in the brain.—The symptoms

of

of these different species are described very accurately, and with great acuteness of observation. The celebrated doctrine of the critical days is explained on Dr. Cullen's principle, that continued fevers observe, in some degree, the type of intermittents. Dr. F. remarks, however, that not above one third of the fevers, which happen in London, are terminated by a crisis.

In particularizing the symptoms, the Doctor describes a state of the tongue which indicates a severe disease, and which has not been sufficiently marked by practical writers. It is not uncommon, he says, for the middle of the tongue to lose the brown fur, and to appear, when moist, cleaner and rawer than it is in its natural state; and, when dry, with a degree of polish, as if it were glazed over. We have had opportunities of remarking this symptom, in lingering and hazardous cases of fever.

The natural means of recovery are stated by Dr. F. to be two; one of these is a crisis, which terminates the disease generally in the second or third week, in less than 24 hours; the other is the gradual diminution of the disease, after the fourteenth day. He observes that sometimes depression of strength, sometimes the violence of the crisis, and sometimes the delirium, will produce fatal consequences. He therefore states the questions, whether the fever should be left to run its course; or, whether means should be used to carry it off; and what those means are. After a long digression, on the meaning of the word 'nature,' as applied to the salutary actions of the system, (which he refers, as we suppose all rational physicians do, to the appointment of the Deity,) we are much disappointed by finding the author unable to determine, even from his own long experience, whether medicine possesses any efficacy in removing fever, in the first instance. The very candour of such a confession renders it more discouraging; and we must take the liberty of saying that, in this instance, Dr. F. is too sceptical. On this subject, he refers to his plan for establishing medical evidence on a permanent footing, which was published some years ago in the *Medical and Chirurgical Transactions;* a plan which we consider as impracticable, because no individual could expect to complete it in the course of his own life; and it appears, too plainly, that we profit little by the most detailed experience of others. To render such a scheme successful, it would be necessary that all medical men should be equally well-informed, equally lovers of truth, and equally capable of observation. This condition, without which the formulæ of the reports would be nugatory, is conclusive against the project.

Passing on, then, to the means of conducting the patient safely through a fever, the author, with a degree of circumlocution which many readers will deem unnecessary, directs the method of warming the air of the chamber, when it is requisite; and of keeping the patient in an equal temperature, by attention to his bed and coverings. On the subject of ventilation, Dr. F. seems to think that the atmosphere is every where nearly the same; and that, in order to introduce a sufficient quantity of pure air into a given space, it is only necessary that the air should not stagnate. On this occasion, he speaks of the supposed advantage of employing a higher proportion of pure air, according to the chemical pathology; and he places the fallacy of the expectation in a very striking point of view.

'Whenever (he says) any new and seemingly important fact has been discovered, and especially if it cannot be applied to any advantageous purpose in mechanical or chemical arts, mankind in general, and very often even practitioners in medicine, conceive it must be applicable to some medicinal purpose, just as an infant, allured by any thing which glitters in its eye, applies it to its mouth, supposing it must be likewise exquisite food; so infants in medicine are dazzled with any surprizing discovery, and immediately employ it for the cure of diseases, not considering how extremely difficult an art medicine is; how fallacious experiments made in it often are, as has been observed long ago by Hippocrates, and by what slow degrees valuable medicines have had their powers investigated; how long it was before the effects of the bark of the cinchona, of mercury, of antimony, were brought to light, as far as they are already known.' (P. 175,-6.)

Respecting the diet of the patient, we find much minute discussion,—more useful, perhaps, to students than practitioners; because, though a diffuse explanation may gratify the former, we apprehend that the latter will discover very little novelty in the author's directions.

In making this observation, we do not wish to imply any charge of plagiarism against this respectable writer. In the number of years during which he has taught medicine in his lectures, he has communicated to a considerable part of the profession his ideas on most of the subjects concerning which he now treats; and, in this manner, he may be said to have anticipated his own publication. When we remark a want of novelty, therefore, it is not for the purpose of discrediting the writer, who is laudably anxious to present full information, but to account for our passing over several important divisions of the treatise, without making either a criticism or an extract.

Dr. F. thinks that patients, in fever, should be allowed to drink as much as they choose, and of the temperature which

shall be most agreeable to them. The necessity of exhibiting an emetic, early in the disease, is then copiously explained. 'It may be,' he observes, 'that something like the same crust, that is formed on the tongue, may also be formed upon the surface of the stomach, and be evacuated by the emetic.' The propriety of using laxatives, when the bowels are loaded with fæces, is discussed in the same manner.—The neutral salts are recommended, in the first instance; and when it becomes necessary to repeat the laxative, we are told that cassia, manna, together with senna, rhubarb, or sulphur, are to be employed. When several laxatives are mixed together, the Doctor says, their operation is more easy, and their effect more certain.

After the first week, glysters are recommended, in preference to laxatives given internally.

Respecting the exhibition of opium in fever, the author's observations demand particular attention, as they appear to be the result of much and accurate experience. We confess, however, that we have not remarked the inconvenience which he describes as arising from opium, employed in doses of half a grain, given three or four times in a day.

'About five and twenty years ago there arose a practice in St. Thomas's Hospital of exhibiting opium in a much less quantity, to wit, in the quantity of a quarter of a grain for a dose, and repeating it at the end of every six or eight hours. When given in such doses it produces no immediate effect, but by degrees the patient falls into a stupor which gradually increases; and although this stupor does not end in a complete sleep, yet it grows in a day or two into that kind of stupor that we find, when the delirium from the fever, with apparent fulness of the vessels of the brain, begins to diminish. It is true, indeed, that this dose of opium is obtained by adding a few drops of laudanum to that mixture which is called mithridate, but the author has often employed the opium in his private practice, with ten grains of castor, with equal or rather better effect.

'Lately many practitioners have exhibited opium three or four times in the twenty-four hours in fevers, having borrowed their practice probably from that which has been pursued in St. Thomas's Hospital, the practice of the Hospital being open to the inspection of many pupils. These practitioners have not learned however, that it is the smallness of the dose that produces beneficial effects; if the dose be increased so far as half a grain, the same restlessness, the same disturbed sleep, dreams, &c. as have been noticed, are brought on.'

The *Spiritus Ætheris Vitriolici* is recommended, in doses of a drachm at bed-time, or repeated every six hours, as procuring sleep in many cases, though uncertain in its operation. This remedy, which many of our readers will remember to have known celebrated as a *febrifuge*, in the language of the last age, has

has certainly a considerable effect in composing the irregular actions of the circulating system, when given in sufficient doses.

On the subject of administering stimulants, the author observes that they should be so directed as to rouse the dormant powers of the body, and keep them in action till the disease abates. The use of blisters, at the *end* of continued fevers, is condemned. We imagine that no judicious practitioner, of the present day, thinks of employing blisters as the means of supporting strength. Wine is the chief remedy proposed by Dr. Fordyce for this purpose. Four ounces of Port wine in a day, he thinks, are sufficient for persons who are not previously accustomed to it; and three half-pints in twenty-four hours, even for those who have been in the habit of drinking it largely.

With this view of the treatment of a regular continued fever, the author concludes this part of his Dissertation. In the next, which is announced as in great forwardness, he proposes to inquire particularly into the effects of the principal remedies which have been supposed to shorten the duration of fever.

We cannot conclude without recommending this work, in the strongest terms, to the attention of those who are beginning the study of medicine: for they will find it a treasure of facts and arguments. There are, indeed, many passages which will enlighten and instruct even veteran practitioners: but we apprehend that it will be better relished by the younger part of the profession. We expect much information from the succeeding part, according to the sketch here given of it.

ART. X. ΕΥΡΙΠΙΔΟΥ ΕΚΑΒΗ. *Euripidis Hecuba, ad fidem MSS. emendata*, &c.

ART. XI. IN EURIPIDIS HECUBAM *Londini nuper publicatam Diatribe extemporalis. Composuit* Gilbertus Wakefield.

ART. XII. ΕΥΡΙΠΙΔΟΥ ΟΡΕΣΤΗΣ. *Euripidis Orestes, ad fidem MSS. emendata*, &c.

[Art. continued from p. 207.]

WHETHER our readers would regret the accident which prevented the appearance of this continuation in the last month's Review, or would deem the omission a necessary and pleasing relaxation, is a point which we dare not assume the liberty of determining.—They may, however, be assured that, if the works before us could have been fairly and accurately examined in a critique of less extent, an abridged form would

have been to us the most agreeable.—We do not often offend thus; and, therefore, we hope for pardon.—To proceed:

ΈΚΑΒΗ, 606. ——τοῦτο δ' ἦν τις ἔν μάθῃ
Οἰδεν τό γ' αἰσχρὸν, κανόνι τῷ καλοῦ μαθών.

Mr. Porson proposes, though aware that Euripides often repeats the same word, μέτρων for μαθὼν, and defends it by Electr. 52.—κανόσιν ἀναμετρούμενος.

Mr. W. allows that the passage is corrupt, but rejects μετρῶν, for reasons to which we do not subscribe; and he reads (dashing out the final N) ΟΙΔΕ το—ΣΤΑΘΜΩΝ. He then refers to Ion. 1156. Æsch. Ag. 1054. Soph. Œ. T. 1111.

It appears far from certain that any emendation is necessary. Μέτρων is, however, an ingenious alteration: for so Aristophanes, also: Ὀρθῷ μέτρήσω κανόνι. *Avib.* 1004. and we find in Apollonius Rhod. I. 724. κανονεσσι—μετρήσασθαι. Σταθμῶν is indefensible; for the *active present* of this Verb is totally unauthorised. Hence H. Stephens rightly says: Σταθμάω, *seu potius* Σταθμάομαι. Thesaur. I. 1742. G. This latter form is found in HERODOTUS VII. 237. p. 616. 100. Σταθμώμενος: though he uses, III. 15. p. 201. 80. and VII. 214. p. 605. 70. Σταθμῶσασθαι, from Σταθμόομαι. In both these places, the reading should probably be Σταθμήσασθαι; for Σταθμησάμενος occurs in IX. 37. p. 710. 69. which form is defended by Suidas, *in Voc.* and by the MSS. in which there does not appear to be any variation. So ESCHYLUS, Agam. 172. Ἐπισταθμώμενος. SOPHOCLES, O.T. 1111. Σταθμᾶσθαι. TRAGICUS INCERTUS, quoted by Philo Judæus, in *Lib. quisq. stud. virtuti*, Vol. II. p. 469.

——— τῇ ῥέτῃ σταθμώμενος
Τὰ πάντα.——

This fragment, Joshua Barnes (for sagacious reasons, doubtless,) numbers among the remains of the Syleus of Euripides. It has been judiciously omitted by Musgrave.

ARISTOPHANES. *Ran.* 797.

Καὶ γὰρ ταλάντῳ μουσικὴ σταθμήσεται.

where, as the future middle is used in a passive sense, κριθήσεται seems the better lection, which the Etymologist gives *, in Voc. Τάλαντον. Suidas *in eadem Voc.*, Brunck's MSS., and the *Codex Ravenn.* so wretchedly published by Invernizius, exhibit σταθμήσεται. Kuster quotes Suidas, and mentions this variation in the Etymologist; which, he observes, is also to be found in some MSS. of Pollux, IX. 52. [Vol. II. p. 1016.] where this

* This reference to the Etym. Magn. is borrowed without acknowlegement from Kuster, by Brunck in his notes on Aristophanes.

verse, or one "*qui huic valde sit similis*," appears. Callimachus also, it may be added, (though not completely to our purpose,) has σλαθμήσασθαι, in a fragment, [XCIV. Vol. I. p. 462.] preserved by Achilles Tatius *in Aratum*, c. 1. and by Diogenes Laertius [I. 23. Vol. I. p. 15.] *in Vit. Thaletis*.

It must be noted that the first aorist active occurs in the Ion of Euripides, 1156.

Πλέθρου σλαθμήσας μῆκος εἰς εὐρώνιον,

where we would read μετρήσας μῆκος, influenced by the sense of the passage,—by the *Middle Participle*, Σλαθμησάμενος, in Herodotus, IX. 37.—and by Aristophanes, *Avib.* 1130.

Τὸ δὲ μῆκός ἐστι, καὶ γαρ ἐμέτρησ' αὐτ' ἐγὼ,
Ἑκατονταργυιον. ——

This last word we have substituted for Ἑκατονταόργυιον, which stands, with a spondeus of ample length *in secunda sede*, in fifteen editions of Aristophanes: Junt. 1525. Gormont. 1528. Basil, 1532. Zanetti, 1538. Weckel, 1540. Farreus, 1542. Brubach, 1544. Gryphius, 1548. Plantin, 1600. Lugd. Bat. 1614 and 1625. Amstel. 1670. Kuster, 1710. Brunck, 1783, and Invernizius, 1794. In the remaining three editions, the Aldine, 1498. the first Juntine, 1515, and the third Juntine, 1540, the word is ἑκατονταόργυιον, which equally destroys the metre. H. Stephens also says: Ἑκατονταόργυιος, *Qui centum ulnarum est*: MALIM Ἑκατονταόργυιον.

In the same way, the *Æolicum tetrametrum*, quoted by Hephæstio, p. 23, very probably from Sappho, must be corrected:

Θυρωρῷ' ποδες ἑπτορόγυιοι.

The lection in Turnebus and Pauw is ἑπταθόργυιοι, which is contrary to Hephæstio's own rule, τοὺς δὲ ἐν μέσῳ, δακτύλους πάντας. Toup, indeed, asserts that O is short before ΡΓ. *Addend.* in Theocrit. XXI. 26. p. 402.—Dorville, who properly rejects the correction of Arnaldus, *Animadv. Critic.* p. 124. Ὀρθά τε γυῖα—says: *Crit. Vann.* p. 437, after a long discussion, "about it and about it:"

"*Mallet tamen ipse vir eruditiss. retinere* ἑπταθόργυιοι, *quod sane unicè verum, quod ad sensum. Florent.* * *habet:* θυρόποδες ἑπταρόγυιοι, *et p.* 90. *rursus* ἑπταρόργυιοι. *De Metathesi cogitare durum.* ἑπταρόργυιοι, *vel* ἑπτορόργυιοι, *non placere possunt.* ἑπτόργυιοι *versus respuit.* ἑννεόργυιοι *facilè apud Homerum quadrisyllabicum est, non hic* ῥέζω, ἔρδω, καρδίη κραδίη *parum juvant. In ludicro poëmatio quid sibi forte permiserit Sappho, nescimus.*"

Thus much from Dorville's note of two pages. As for Pauw's remarks, let them rest in peace. Whatever licence

* Edit. Princeps Hephæstionis, cum Theod. Gaza, Lecapeno, et Emman. Moschopulo, ap. Hæredes Philippi Juntæ, 1526. Octavo.

Sappho

Sappho might allow herself, she never could admit one which would destroy the metre. It is surprising that Dorville did not discover the true word; for the Scholiast on Hephæstio, as he mentions, gives in p. 90 of the first edition, ἐπλαρόγυιοι, which requires only the change of A into O to become the genuine reading: Ἐπλορόγυιοι. Let the Great Etymologist establish the alteration:

Ὀργυία σημαίνει τὴν ἔκπλασιν τῶν χειρῶν, σὺν τῷ πλατεῖ τοῦ σώματος· παρὰ τὸ Ὀρέγειν καὶ Ἐκτείνειν τὰ γυια, ὁ ἐστι τὰς χεῖρας. P. 629. 43. Ὀρόγυια.] Ὀρέγω τὸ ἐκτείνω· ὁ μέσος παρακείμενος, Ὤρεγα. Ἡ μετοχὴ, Ὠρεγώς· τὸ θηλυκὸν, Ὠρεγῦια. Συστολῇ καὶ τροπῇ, Ὀρόγυια. P. 633. 5.

These emendations, and the reference to the Etymologist, many years after they had occurred to us, we found proposed in some inedited notes on Hephæstio by Mr. Leonard Hotchkis, who styles himself *Scholæ Regiæ Salopensis nuper Magister*. He appears to have formed a plan of publishing this author; and it is to be lamented that he did not execute his design. *

Let us return to Σλαθμᾶσθαι. Valckenaer and Pierson wish to change ἀθρήσας into σλαθμήσας, in the Cyclops, 379.

Δισσούς γ' ἀθρήσας, κἀπιβασλάσας χεροῖν,

and the latter critic would make the same alteration in a fragment of Eurystheus, *apud. Stob.* 98. and *Musgrav.* VII. Ὀρθῶς σλαθμήσαν]'——for ἀθρήσαν]'.—Valcken. Diatribe, p. 172. The common reading appears to us sound in both passages: but at any rate the active form σλαθμήσας cannot be admitted, unless authorities for its usage be produced. These places will doubtless be ably examined and weighed, as in a balance, by Mr. Porson, when he arrives at the Cyclops. Let them, together with the banishment of Σλαθμήσας from Ion, 1156. and the introduction of μελῃήσας, be referred to his decision.

It must be observed that, of Mr. Wakefield's three citations to defend Σλαθμῶν, the FIRST, EUR. *Ion*, 1156. gives Σλαθμήσας, which *active aorist*, were it right, could not vindicate the production of an *active present*: the SECOND, ÆSCH. *Agam.* 1054. καὶ παρὰ σλάθμην, exhibits the *substantive*, and can be no defence for the *active present* of the verb; and the THIRD, SOPH. *Œd. Tyr.* σλαθμᾶσθαι, can serve only to prove that the middle form of the verb was in use among the Attic Poets.

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* The certainty of these corrections is also evinced from a passage in the MS. Lexicon of Photius, communicated by a learned friend, who also had formed the same emendations in Sappho and Aristophanes. Ὀργυίας λέγουσιν, οὐχὶ Ὀργυίας. Ἀριστοφάνης. This article must probably be referred to the passage in the *Aves*.

One example more from an Ionic writer—not Herodotus, indeed, though his name stands on the margin of *Stobæus*, XXVIII. p. 197. *—shall conclude this note: Ἄνδρα δὲ ἰυκ ἰσῆ δέξιον, γνώμῃ ΣΤΑΘΜΗΣΑΜΕΝΟΝ, ἀθρῆσαι †.

615—619. Mr. W. proposes a new punctuation, which weakens the passage; and in 619 he changes *κόσμον τ' ἀγείρασ'*, without any sound reason, into *κίσμον γ' ἀγ.* The verses are sufficiently clear, and require no alteration. The whole passage is admirably adapted to the situation of Hecuba.

661. Τί δ', ὦ τάλαινα σῆς κακογλώσσου βοῆς;

Thus Mr. W. would regulate the punctuation. Mr. P. gives τάλαινα;—Musgrave, Brunck, and most others place a *comma* after τάλαινα. Aldus puts no stop, but adds a *comma* to βοῆς, and places the interrogative mark at the end of the following verse, after κηρύγμαΐα;—As the Aldine and the Basil of 1537 read, as Mr. W. proposes, τάλαινα σῆς—*nulla mora interposita* they should have been mentioned by him; since the merit of this omission,—whatever it may be,—belongs to those editions.

787. Κοινῆς τραπέζης πολλάκις τυχὼν ἐμοὶ,
Ξενίας τ' ἀριθμῷ πρῶτος ὢν ἐμῶν φίλων.

R. P. '783. *ξένων multi MSS. male. Aldus et omnes fere MSS.* πρῶτα. *Brunckius ex membr. suis edidit* τὰ πρῶτα, *tantum duplici anapæsto delectatus, quantum alii offenduntur.* ξένια *conjecit Musgravius, quod frigidum et obscurum est. Distinctionem, post* ἐμοι *sublatam, post* ξενίας *reponit Beckius, quo quid proficiatur, nescio. Omnino post* τυχὼν *aliud participium, quod duo sententiæ membra connectat, requiritur. Cum semel scriptum esset,* πρῶτος ων τῶν ἐμῶν φίλων, *aliquis metri studiosus vulgatam inde lectionem effinxit. Simili modo Aristophanis locum Vesp.* 1429. *Brunckius contaminavit. Sæpius* ἱππικὴ *et* μουσικὴ *sine articulo adhibent Attici. Recte igitur legimus,* Ἐτύγχανεν γὰρ ὢν τρίβων ὢν ἱππικῆς. *Hoc autem Brunckius ignorans, participium, quod erat necessarium, ejecit; articulum, qui non erat necessarius, inseruit.* Ἐτύγχανεν γὰρ οὐ τρίβων τῆς ἱππικῆς.'

The whole of Mr. P.'s note is here transcribed, in order to commemorate the emendation of Aristophanes, as well as to give the Editor's sentiments respecting this passage.

Mr. W. defends the reading of Aldus,

Ξενίας τ' ἀριθμῷ, πρῶτα τῶν ἐμῶν φίλων,

though he omits the comma after ἀριθμῷ. He then cites Homer, Od. P. 155.

Ἴσθι νῦν Ζεὺς ΠΡΩΤΑ ΘΕΩΝ, ξενίη τε τράπεζα.

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* Wesseling, in his notes on Herodotus, p. 605. where he quotes this passage, says; *Tale tanquam ex* Herodoto, *cujus non est, in* Stob.

† Compare with this extract the places in which Valck. and Piers. wish to change ἀθρήσας into σταθμήσας.

The

The same verse, he might have added, occurs in Od. Ξ. 158. and Υ. 231.—Πρῶτα θεὼν is not the same as τὰ πρῶτα Θεων would be, but means: *Primum inter Deos*, seu *ante alios Deos*. [H. Steph. Thes. III. 567. C.] and, πρῶτα τῶν ἐμῶν φίλων may signify, *Primum inter amicos*, or *ante alios amicos*: but what is the construction of ἀριθμῷ, and how is it to be rendered?—τυχὼν κοινῆς τραπέζης, ξενίας τε is plain; and so is πρῶτα τῶν ἐμῶν φίλων, when each member of the sentence is considered separately, and the one is taken independently of the other: but ἀριθμῷ, to whichever it be joined, produces obscurity.

After having considered the Editor's emendation, Mr. W. adds that Mr. P. has observed that a participle is wanting after τυχὼν:

'*Quæ aut recta sunt, aut non. Nobis videtur substantivi verbi participium reticeri potuisse. Ne vero nimis contumaces simus, hoc ei largiamur; et proponamus vicissim probabiliorem restitutionem loci:*

κοινης τραπεζης πολλακις τυχων εμοι
ξενιας, αριθμῳ πρωτα Τ' ΩΝ εμων φιλων:

i. e. "*hospitalitatem communis mensæ mecum participans.*" *Nec dissimulem tamen, mihi non minus hanc formam arridere:*

ξενιας, αριθμῳ πρωτα των εμων φιλων:

omissà tantum copulà; quam, ut putem, ignorata constructio invexit.'

Mr. W.'s fluctuation of opinion is remarkable; first, he is for the lection of Aldus, ξενίας τ' ἀριθμῷ, in which the connecting participle is wanting. Secondly, though he doubts whether a participle be or be not requisite after τυχὼν,—he reads ἀριθμῷ πρῶτα Τ' ΩΝ, where if Τ' ΩΝ stands for τε ὢν, "COPULA *locum non suum occupat*," to use Mr. Porson's words, *Append. in Toup.* IV. p. 489. where he acutely corrects Callimachus, *ap. Suid.* V. Δύην. from Δυην ἄποθεν τ' ἀπαλάλκοι, into Δύην ΑΠΟΘΗΤΟΝ, vel ἀπόθεσθον ἀλάλκοι. Independently, however, of the position of ΤΕ, what meaning must be assigned to πρῶτα, in this alteration? If it be to stand for τὰ πρῶτα, it is inadmissible, as Hemsterhusius in Lucian I. p. 163. and as Brunck in E. Orest. 1251. observe. If it be to take the signification which πρῶτα bears in the verse cited from the Odyssey, how is the passage to be translated? Must it be *Numeroque existens ante alios meos amicos?*

Thirdly, Mr. W. would banish the copulative wholly, and join ἀριθμῷ with πρῶτα τῶν ἐμῶν φίλων. Then it must still be rendered: *Numera ante alios meos amicos.*

No one of Mr. W.'s proposed alterations can be allowed; nor do Brunck and Musgrave deserve any commendation. Mr. Porson's πρῶτος ὢν ε. φ. is ingenious, and shews his nicely accurate knowlege of the Greek language; yet we do not feel completely satisfied.

803—805. Mr. Wakefield proposes to change ἄπολις into ἀποσις. Our protest has already been offered against this imaginary word, in the remarks on V. 285. There is no such compound. Mr. W. assigns as a reason for the necessity of this alteration, '*si clausulas sententiæ singillatim intuearis, liquebit aliter non inveniri quod respondeat voci* τυραννος: *erat enim Hecuba quondam* regina, *quum fuerat* uxor regis.' *Diatr.* p. 29.—In this verse,

Τύραννος ἦν ποθ', ἀλλὰ νῦν δούλη σέθεν.

the opposition, surely, is strong enough between τύραννος, *a queen*, and δουλη, *a slave*: so that, even if there existed such a word as ἀποσις, its insertion in this passage would be not merely unnecessary, but even improper.

806. Ὀι μοι τάλαινα, ποῖ μ' ὑπεξάγεις πόδα;

G. W. '*Mutatâ saltem literulâ, lectio suboritur, quæ fortassis omne punctum doctorum feret:* —— ποι μ' ὑπεξαγεις ΠΟΔΙ;'

The Dative ποδὶ would rather refer to the person who stands as the Nominative of the Verb ὑπεξάγεις, than to the Pronoun με. Πόδα is the Accusative of the Instrument or Member by which the motion is effected. Mr. Porson's note on Orest. 1427. has been cited on V. 53.

831. Καὶ χερσὶ, καὶ κόμαισι, καὶ ποδῶν βάσει.

R. P. '*Pro* κόμαισι *primo* κόρσαισι, *deinde* κνήμαισι *conjicit Musgravius. Sed cum omnes MSS. et edd. tum Etym. M. p.* 26. 54. *vulgatam lectionem confirmant.*'

G. W. '*In Ver.* 831. *nihil in hac arte certius emendatione Musgravii:* και χερσι, και ΚΟΡΑΙΣΙ—*pro vulgata scriptione* κομαισι.'

The authors of the *Bibliotheca Critica* also think that Musgrave's correction is right. We are decidedly hostile to all emendations which are not absolutely demanded, in order to remove some blunder in the sentiment, the construction, or the metre of any passage. As the word κόμαισι is not destitute of sense, the caution of the Editor in not altering the text of his author, without an urgent necessity, merits our commendation. It must be added, also, that Valckenaer quotes this passage in order to compare it with *Phœn.* 318. and does not dispute the old reading. He likewise mentions the citation of the Etym. Magnum.—This verse, with the preceding and following lines, is introduced likewise by Joannes Tzetzes into his Chiliad, I. 19. whom the Editors of Euripides have not mentioned. He preserves the lection of our copies, κόμαισι. We readily grant, however, that κόραισι is an ingenious correction; though it is not defended by any authority.

In this note, Mr. W. proposes an emendation on the *Ajax* of Sophocles, 1209. where he reads κεῖμαι—δρόσοις τεγγομενος ΚΟ-

ΡΑΣ

ΡΑΣ λυσρας, μ. τ. κόμας, λυγρᾶς μνήμαΐα Τροίας. This innovation would destroy the whole beauty of the passage. How will ΚΟΡΑΣ δρόσοις τεγόμενος, even if δρόσοις signifies *tears*, suit κεῖμαι, and the preceding part of the Chorus? It seems to degrade the firm character of Ajax's Salaminian Warriors. How will these verses of Sophocles, thus altered, correspond with the account given by the Herald, in the Agamemnon of Eschylus, after his return from the siege of Troy: 560.

Ἐυναὶ γὰρ ἦσαν δηΐων πρὸς τείχεσιν·
Ἐξ οὐρανοῦ γὰρ κἀπὸ γῆς λειμωνίαι
Δρόσοι καλεψέκαζον ἔμπεδον σίνος
Ἐσθημαΐων, τιθένες ἔνθηρον τρίχα.

An observation might be made on λειμωνίαι and τιθένες: but we are in expectation of Mr. Porson's notes.—

905. —— καΐα δ' αἰθάλου
Κηλῖδ' οἰκτροΐάτα κέχρωσαι.

R. P. ' αἰθάλῳ *al.* αιθαλου καπνοῦ *Ald. et multi MSS.* καπνοῦ *omittit* K.'

906. ' R. P. ' *Sic Ald. et MSS. Quidam* οἰκτροΐάταν.'

This text exactly gives the reading of Aldus, except the omission of καπνοῦ after αἰθάλου, and it appears sufficiently perspicuous. Mr. W. is of a different opinion. He first is surprised that Mr. P.'s *superbissimum judicium* should assent to the elision of the final vowel in κηλῖδι, and next he wishes thus to reform the passage:

—— καΐα δ' αιθαλῳ,
ΚΗΛΙΔ' ΟΙΚΤΡΟΤΑΤΑΝ, κεχρωσαι ——

These alterations are gathered, as Mr. W. confesses, from the various lections*. We again repeat that, according to our judgment, the passage, as Mr. Porson gives it from Aldus, requires not alteration.

It may be inquired, however, why the Editor should have been offended with an elision of the final I in a dative singular?—To this question we are unable to give a satisfactory answer.—Has any metrical law been promulgated, by which such an elision is forbidden? Has any critic attempted to establish such a metrical law?—If he has even wished it, let him consult the books, the genuine Attic code; and his opinion will be altered. Ὡς μὲν τοίνυν οὐχὶ καλῶς ὕΐος ἔχει, καὶ δικαίως, ὁ νόμος, ὕΐ' ἐρεῖν ἔιμαι ἀΐὸν, οὔτ', ἐὰν λέγῃ, δεῖξαι δυνήσεσθαι.

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* αἰθαλω is from *Beckius*'s *Cod.* D. which belongs to *Matthæus*, and from King's Edit.—οἰκτροΐάταν is proposed by Heath, is published by Musgrave and Brunck, and appears in Musgrave's MS. A. and Lib. P.

In

In the Appendix to Toup, Vol. IV. p. 450. Mr. Porson promulgates this Canon: "*Nunquam elidi vocalem in dativo plurali.*" This rule the reader will find defended and illustrated in the account of the learned Mr. Glasse's Samson Agonistes, Monthly Review, September, 1789, p. 244, in which are examined most of the passages in Euripides that seemed to oppose it.

This Attic law has not been ratified by the decisions of Mr. Wakefield. Does he wish to transfer it to the singular number?—We find in his *Sil. Crit.* IV. p. 231. the following line given in his corrected copy of the Iambics by Aristo, preserved by Theophilus, *ad Autolyc.* IV.

Εσ|ι δε και τοις ζωσ' ὁσιως προεδρια,

in which a Trochæus occupies the first place, and a Pyrrhic the fifth, in a trimeter Iambic. Why not read:

Ἔσ|ιν δὲ καὶ τοῖς ζῶσιν ὁσίως προεδρία.

The Εψιλον in προεδρία, according to Dawes's Canon, *Misc. Crit.* p. 197. cannot possibly be long in Comedy. Hence Aristophanes, in his *Equites*:

575. Νῦν δ' ἐὰν μὴ προεδρίαν φέρωσι καὶ τὰ σίλια.
702. Ἀπολῶ σε, νὴ τὴν προεδρίαν τὴν ἐκ Πύλου.
703. Ἰδοὺ προεδρίαν· οἷον ὀψομαί σ' ἐγώ.
704. Ἐκ τῆς προεδρίας ἴσχατον δεώμενον.

and so in his *Acharn.* 42. and in his *Thesmoph.* 834.; and so Aristo himself, if the passage be genuine, in the third line of this very fragment. In Tragedy, the quantity of this syllable may vary; as is the case in Orestes, 298. *Edit. Porsoni*, with προσεδρία.

Εἰ γὰρ προλέιψεις μ', ἡ προσεδρία νόσον——

Ζῶσιν, moreover, is the lection of the Edit. Princeps. Tigur. 1546. of Wolfius's Hamb. 1724. and of the Hagæ Comit. 1742. Wolfius proposes Ἔσ|ιν, and Grotius *Excerpt.* p. 1005. reads Ἀλλ' ἔσ|ι καὶ τοῖς ζῶσιν.——

At the end of this note is a correction of Hesychius: Αιθαλωδης, καπνωδης, σποδωδης, instead of σκο|ωδης; which merits attention, and is defended by proper authorities.

921. ἐπιδέμνιος ὡς πέσοιμ' ἐς ἐυνάν.

R. P. is silent. G. W. censures '*feda hujusce orationis tautologæ scabitudo*,' and ἐς ΥΠΝΟΝ. This emendation may class with some which have been already noted. Whether ἐς ἐυνὰν or ἐς ὕπνον be the lection, the sense will scarcely be varied. In Herc. F. 1050. we find

——μὴ δοᾶτε, μὴ
Τὸν εὖ διαύονία [ἐυδιαόνία conj. Musgr. in Not.]
Ὑπνώδεα τ' ἐυνᾶς ἐγείρ|ε.

Ne

Ne ex *somno* excitetis. Musgrave. The passage, however, seems defective. Might it not stand:

Ἐπιδέμνιον ὡς πέσοιμ' ἐς ἑυνάν.

931—936. Mr. Wakefield proposes some alterations in Mr. Porson's punctuation of this passage, which are for the most part derived from Musgrave. It is not observable that these lines, which are sufficiently clear in the new edition, acquire by these changes any additional perspicuity. In 934. Mr. W. reads ΕΚΙΝΗΣΕ for ἐκίνησεν, which destroys the metre.

970.——ἀλλὰ τίς χρεία σ' ἐμοῦ;

Mr. W. proposes rather an aukward emendation:

—— αλλα τις χρεια 'ΣΤ' εμου,

but the passages demand illustration, and not correction. Mr. Porson has performed this duty with his usual ability in the comments on his second Tragedy; where he states that he reserved this passage of the Hecuba, till he wrote his remarks on the Orestes, V. 659. We shall transcribe the whole note, and recommend it to the careful perusal of our readers; as a specimen of that neatness of style, united with acuteness and learned research, which is so eminently displayed in the observations of this Editor.

ORESTES. 659. τί χρὴ φίλων.

'*Sic diserte citat Thomas Magister in.* v. χρὴ, *addens* ἔστι δὲ τοῦτο ποιητικώτερον. *Ego vero huc primo transferam, quæ annos abhinc plus minus quindecim in Anglica Brunckiani Aristophanis censura scripsi* (H. Maty's *Review*, *July* 1783, *p.* 66.) "Accurate plerumque Aristophanes sententiarum suarum partes alteram alteri respondere facit, ut Αν. 1419. ὀδὶ πάρεστιν. ἀλλ' ὅτου χρὴ, δεῖ λέγειν. Πτερῶν πτερῶν δεῖ. In priore versu legi debere ὅτου δεῖ, χρὴ λέγειν, clarum est non solum ex apodosi, sed ex eo, quod apud Atticos poëtas genitivum nunquam regit χρή. Unicum, quod obduci posse credo, exemplum, exstat Euripid. Orest. 667. [*ed. Musgrav. sc.*] sed et illud in τί δεῖ φίλων mutandum auctoritate Plutarchi Op. Mor. *p.* 68. *E.* Aristotelis Ethic. IX. 9." *Et quod Aristophanem attinet, anno* 1794 *codicis Ravennatis collationem edidit Invernizius, quæ istam emendationem confirmavit. Ipse tandem* τί δεῖ φίλων *inveni in MS. quem voco L. Is est Codex Ayscough.* 4952 *in Museo Britannico, tres primas continens fabulas, recentissimus quidem, sed ex alio non malo descriptus; scriba literas et syllabas festinando sæpe transilit; aliquando etiam exemplaris sui literarum ductus parum intellexisse videtur. Restat ut formulam hanc et similes paucis illustremus. Homerus, nisi me fallit Seberi index, semel tantum verbo* δεῖ *usus est, et tum infinitivo præponit Il.* I. 337. *Stobæus quidem XCVIII. p.* 409. *citat ex Il.* Φ. 463. τί γὰρ δὴ δεῖ θνητῶν ἕνεκα πτολεμίζειν pro εἰ δὴ σοί γε, βροτῶν ἕνεκα, πτολεμίζω. *Cum et Plutarchus Consol, p.* 104. *F.* πτολεμίζειν *habeat, si leges,* εἰ δεῖ σοί γε, βροτῶν ἕνεκα, πτολεμίζειν, *constructionem quandam extundere poteris, sed sensus non bene procedet. Cum infinitivo* χρὴ *sæpissime construit, cum accusativo personæ et rei genitivo*

tivo Il. H. 109. *Od.* A. 124. Γ. 14. Δ. 463. Φ. 110. X. 377. *Pari modo substantivum* χρεὼ *cum accusativo et genitivo Il.* I. 75. 603. K. 43. Λ. 605. *Od.* Δ. 634. *In Il.* Φ. 322. οὐδέ τι μιν χρεὼ Ἔσται τυμβοχόης, *alii legunt* τυμβοχόῃσ', *elisa diphthongo. Hanc formam semel ausus est imitari Euripides Hec.* 970. ἀλλά τις χρεία σ' ἐμοῦ; *de qua ibi tacui, ut hoc loco eam memorarem. Scholiastes apte satis advocat Il.* K. 43. χρεὼ βουλῆς ἐμὲ καὶ σέ, *paullo forsan aptius advocaturus* Λ. 605. τί δέ σε χρεὼ ἐμεῖο; *Communes Græci dixere,* δεῖ σοι τοῖδε; *primus, ut equidem arbitror, novavit Æschylus Prom.* 86. αὐτὸν γάρ σε δεῖ Προμηθέως. *Eum secuti sunt, Euripides Hec.* 1015. *Phœniss.* 484. *Hippol.* 23. *locisque ibi a Valckenario indicatis, Ion.* 1037. *Herc. F.* 1173. *Auctor Rhesi* 840. *Comicus ignotus apud Herodianum Piersoni p.* 450. εὐρυχωρίας σε δεῖ. *Non sine specie hanc formulam reddi voluit Marklandus Iph. A.* 1137. *sed certissime restituit Musgravius Hel.* 1444. *pro* τῆς τύχης ΜΕΛΕΙ μόνον. *Ceterum bene comparavit Brunckius Herc. F.* 1341. Θεοὶ δ' ὅταν τιμῶσιν, οὐδὲν δεῖ φίλων· Ἄλις γὰρ ὁ θεὸς ὠφελῶν, ὅταν θέλῃ.'

1038. ἦ γὰρ καθεῖλες Θρῇκα, καὶ κραίεις ξένε;

Mr. Wakefield, after some vehement remarks, proposes: καθεῖλες τεκνα, και κραίεις ξενου——and adds: 'Sentisne Hecubam *de* duobus *facinoribus loqui; et chorum, verba cadentia tollentem, de* duobus *similiter interrogare.*'

To the justness of this alteration we cannot subscribe. There are two circumstances, indeed, mentioned by Hecuba,—the blindness of Polymestor, and the murder of his children. The Chorus also speaks of two: *Illum cepisti Thracem, et superior facta es hospite, Domina*;—and then, avoiding the mention of death: "*Patrasti qualia dicis?*" alluding to Hecuba's words: παῖδας οὓς ἔκτεινʼ ἐγώ. The Chorus could not properly ask, ἦ καθεῖλες TEKNA, *Cepistine* LIBEROS, immediately after the Queen had said: FILIOS——*quos interfeci ego;* though she might readily inquire whether Hecuba had really accomplished what she had stated? The reply is, that the Chorus will see Polymestor advancing blind; and will see the bodies of the two children, whom she had killed. The word καθεῖλες cannot in any way be properly applied to the παῖδες.

1048—1050. Πᾶ βῶ; πᾶ σταθῶ; πᾶ κέλσω; Τετράποδος βάσιν θηρὸς ὀρεσσέρου Τιθέμενος ἐπὶ χειρα, καὶ ἴχνος.——

R. P. 1050. Καὶ ἴχνος *interpretatur glossa,* ὁμοίως τῷ ἴχνει. 'Sed *legendum videtur,* καὶ καὶ ἴχνος, *ut* ἴχνος *simpliciter pro* pede *capiatur. Bacch.* 1122.——*Catull. Nupt. Pel. et Thet. Candida permulcens liquidis* VESTIGIA *lymphis.*'

G. W. in the first place, says: 'Mihi *videtur*—Ver. 1050 ὁλοκληρος *et sanissimus, ad glossæ datæ mentem: Incedens ope manûs, quasi* pes *foret*:'—but, in the second, he informs us that *nec tamen F. Jacobs malé intellexit:*' who states that in this passage, "*Non agitur de vestigiis* Polymestoris, *sed Trojanarum, quas insequebatur.*" Animadv. in Euripid. p. 8.—and thirdly, if Mr. Porson's

Porson's interpretation be admitted, Mr. W. offers a correction:

" επι χερα ΚΑ'Π' ιχνος,"

but he does not teach us on which we ought to fix; whether on the present *sanissimus* state of the line 1050 as explained by the Gloss; or on the *nec malè* proposed explanation of Mr. Jacobs; or on his own alteration.—It is, indeed, *plenum opus aleâ* to attempt to correct the Monostrophic Odes, as they are termed, in the Tragedies. The Verse, as it stands, is irregular enough: but till its metre be settled on some sure ground, who can determine which is the genuine reading?

Stanley, in his note on the Eumenides of Eschylus, 37. thus interprets it: " ἐπὶ χεῖρα καὶ' ἴχνος. *Manui incumbens e vestigio: hoc est, vestigans manibus, quo iturus sim, et pedibus manuum vestigia sequens. Ni potius,* καὶ' ἴχνος *accipiendum pro* ἐν τῇ πορείᾳ." Stanley here, however, hesitates about the signification of καὶ' ἴχνος.—Reiske reads ἐπ. χειρὶ, and joins καὶ' ἴχνος (*id est*, he says, καλὰ βάσιν) with θηρὸς τετραπόδος ὀρεσιτέρου—*super manu*, seu ope manus, ad eum *modum quo graditur bestia quadrupes*.—Heath proposes a different mode,—as does Musgrave. Mr. Porson would add a long syllable καὶ to the verse; and Mr. Wakefield would change the short καὶ', into the long ΚΑ'Π'.——We are not satisfied.*

1048. Πᾶ βω; πᾶ σἰῶ;

Mr. Wakefield changes πᾶ σἰῶ; into ποῦ σἰῶ; in this verse and in 1070, and in Alcest. 876.—in which place, however, he has himself published πῃ σἰω;

Ποῦ; *Ubi? Where?* and Πόι; *Quo? Whither?* ought never to be confounded, as Phrynichus has remarked: Ποῖ ἅπει, συνιάσσεται ἔτι ω διὰ τοῦ Ι, ποῦ δὲ ἅπει, διὰ τοῦ Υ, ἀμάρτημα. Ἐι δὲ ἐν τῷ Υ. Ποὺ διαιρίβεις; p. 14. Ed. Pauw.

Mœris, indeed, says, p. 317. Ποῖ, Ατθικῶς. Ποῦ, κοινόν, which seems to refer to the later Greek writers; and examples may be found in the New Testament. In the *Ajax* of Sophocles, 1237: Πῆ βάντος, ἢ ποῦ σταίντος, ὅστις ἐστὶν ἐγώ, is the usual reading: but, ποῖ βάντος, ἢ ποῦ σταίντος——is the lection in Brunck's *Codex*.

H. Stephens, indeed, in his Lexicon, defends the text, as it appears in his own edition, which he had published a few years previously: Ποὺ *significat interdum motum ad locum, sicut*

* In Euripides we find ἴχνος ποδὸς frequently; and ἴχνος alone, in the sense of πῆδος;—Mr. Porson's citation from Catullus brought to our mind a passage in Apuleius, Apol. p. 410. *Ed. Delph.*—*Feris et pecudibus os humile, et deorsum ad pedes dejectum, vestigio et pabulo proximum.*

et

et οὖ ut in hoc Sophoclis versu, ubi et in præcedenti significatione [*scil. interrogativa*] *capitur,* Ποῦ βάλλος, ἢ ποῦ σλανλος——— Vol. II. 1507. E.

In the *Hippolytus*, 890. Πᾶ *φύγω βάρος κακῶν*, is in Musgrave's text, though Aldus gives *πῆ φύγω*—as does the capital letter *Princeps.*—Πᾶ is derived from Valckenaer, who says: "*Pro vulgata vocula* Πῆ, *Ubi, illinc* [ex Cod. Paris.] *recepi* Πᾶ *φύγω*; quo fugiam: *non nescio quam multa possint Grammaticorum observatis obmoveri; et sane nolim ista talia nisi Codicum auctoritate mutari.*" An example must be added from the Phœn. 635.

Ποῦ *πόλε σλήσει πρὸ πύρσων*;———

as it may appear to defend Mr. Wakefield's alteration: but Πῆ does not always signify *motion.* Ἧ means, *qua ratione, quo pacto, quo modo:* Πῆ; is the interrogative, and means *qua ratione? quo pacto? quo modo?*—"*Item,* (to use the words of H. Stephens, II. 1510.) *qua, necnon quo, ut* πῇ. Pythag. *πῇ παρέβην*; *τί δ' ἔρεξα*;—Odyss. O. [508.] Πῇ *γὰρ ἐγὼ*—*ἴω*; EURIPIDES *Hecuba* [1048] Πᾶ *βῶ*; *πᾶ σλῶ*; (DORICE *πᾶ usurpans pro* Πῇ) *ubi posterius πᾶ accipi etiam queat pro πῆ, Ubi; sicut in simili loco Sophoclis, citato in πῆ, prius ποῦ accipitur pro Quo, posterius pro Ubi.*"

Though *πῇ* is nearly allied in signification, both to *πῆι* and *πῆ*, it does not follow, as was observed, that *πῆι* and *πῆ* may be written indiscriminately. On the contrary, we would have published the passage of the Ajax, from Brunck's MS.; *πῆι βάλλος*; *ἢ ποῦ σλάλλος*——as in the Philoctetes, 833. 4. we find:

Ποῦ *σλάσει, πῆι δὲ βάσει.*

Let the Etymologist* speak: Πῆ, *ἐπίῤῥημα ἐρωλήσεως, ἀνλὶ τοῦ ποῦ*; *σλι καὶ ἀόρισλον· ὅλε δὲ ἐσλιν ἐρωτημαλικὸν, περισπᾶται. Διαφέρει δὲ τοῦ που, ὅτι τὸ μὲν πῇ, την εἰς τόπον σχέσιν σημαίνει, ὡς Ὅμηρος φησιν* [Z. 377.] Πῇ *ἔβη Ἀνδρομάχη*;—*τὸ δὲ ποῦ, τὴν ἐν τόπῳ* [Hom. Il. K. 406.]—Πῆι *δ' ἔυρο κιὼν λίπες Ἕλλορα*;——*Ὅθεν οὐ δεῖ λέγειν· ποῦ ἀπέρχῃ, ἀλλὰ πῇ.* Ammonius's account, p. 112. is nearly to the same purpose, and they may perhaps assist each other: he concludes, after having produced the same two examples from Homer: *ὡσθ' ἁμαρλάνουσιν οἱ λέγονλες· ποῦ ἀπέρχῃ*; *δέον εἰπεῖν, πῇ ἀπέρχῃ*; Valckenaer's note shall be transcribed: "*De Veterum in minutis hisce vocabulis secernendis usu ex libris judicari non potest, in quibus promiscuum obtinere, nemini non constat.—Quæ in ultima hujus literæ nota traduntur, peregregia sunt.*"

Thomas Magister also: *τὸ μὲν γαρ* [*πῆι*] *ἐπὶ κινήσεως, ὡς τὸ· Πῆι ἔβη Ἀνδρομάχη*; [*ubi in principe Florentina et in aliis Edd.*

* He seems to have copied two different Grammarians.

Πῦ

Πῆ]—καὶ τὸ πῆ δὲ διὰ τοῦ ή, ἐπὶ κινήσεως, ὡς τὸ πᾶ ἔω, παρ' Εὐριπίδῃ ἐν Ἑκάβῃ. Τὸ δὲ ποῦ, ἐπὶ στάσεως——Thus they speak of ποῖ and πῇ as relative to motion; and so Polymestor in the Hecuba says:

1066. Ποῖ, πᾶ φέρομαι——

and the same remark may be found in Eustathius, in Iliad K. 1664. 6 Ed. Rom. 405. 25 Basil. but the observation of the Etymologist, that Πῆ, *adverbium Interrogationis*, is used ἀντὶ τοῦ ποῦ, as well as indefinitely; though it differs from ποῦ, in as much as ποῦ never signifies τὴν εἰς τόπον, but τὴν ἐν τόπῳ σχέσιν; is confirmed by the Scholiast on the passages just cited from the Hecuba [V. 1075. *Ed. Musgr.*] Ποῖ ἀντὶ τοῦ ποῦ, ὅτι μὲν ἐπὶ κινησεως λαμβάνεται, διὰ τοῦ ΟΙ διφθόγγου γράφεται· ὅτε δὲ ἐπὶ στάσεως, διὰ τοῦ Η. καὶ δῆλον ἀπὸ τοῦ· ΠΑ ΣΤΩ; Εὑρηται δὲ καὶ ἐπὶ κινήσεως καὶ διὰ τοῦ Η. καὶ δῆλον ἐκ τοῦ· Πᾶ βῶ; πᾶ στῶ; παρ' Εὐριπίδῃ. Εἰ δὲ ποῦ καὶ διὰ διφθόγγου εὕρηται ἐπὶ στάσεως, κατὰ παραχρησίν ἐστιν.

The same opinion of ποῖ and ποῦ and their representative πῇ is delivered by the Scholiast on Aristophanes, who has also cited the very verse from the Hecuba to which Mr. Wakefield objects, as it stands in Mr. Porson's and in the other editions. His remark shall conclude the defence of the old reading, πᾶ στῶ; here, and in 1070, and in Alcest. 876.

Aristophanes, *Plut.* 447—Ποι φευξούμεθα. Scholiast. Τὸ ποῖ ἐνταῦθα οὐκ ἐστιν ἐρωτηματικὸν, ἀλλ' ἀόριστον. Ἐπὶ μὲν γὰρ κινήσεως μόνον τὸ ποῖ, διὰ τοῦ Ο καὶ Ι διφθόγγου γράφεται. Διὰ δὲ τοῦ Η γραφόμενον καὶ ἐπὶ στάσεως καὶ κινήσεως τίθεται· Καὶ δῆλον ἐκ τοῦ· Πᾶ βῶ; πᾶ στῶ; παρ' Εὐριπίδῃ. Εἰ δὲ ποῦ καὶ διὰ διφθόγγου εὕρηται ἐπὶ στάσεως, κατὰ παραχρησίν ἐστιν.

1168—1172. Mr. W. discovers, from the manner in which these verses are published by Mr. Porson, that he could not have penetrated into the author's meaning: the same assertion may be applied safely, Mr. W. also imagines, to Brunck and Ammon; who, however, he says, have managed the punctuation more skilfully. If they had understood the passage, they would scarcely have denied a right interpretation to their readers.

As to the want of an interpretation, this omission cannot attach the slightest blame to Mr. Porson or his Edition; for he openly declares in his Preface, p. xvii.—"*Interpretandi et illustrandi labore, utilissimo sane, supersedendum duxi, partim ne libellus in librum excresceret.*" Why Mr. W. should urge this deficiency of explanation, as a proof that Brunck did not understand the passage, is also beyond our apprehension; for he never professes, as far as we recollect, to undertake the duties of an interpreter.—As for Ammon, it is of little consequence what part he assumes, or what is expected from his labours.

To proceed: Mr. Wakefield's censures arise, *first*, from Mr. Porson's not having ended V. 1168 with "ειρηκε κακως" as it stands in Aldus and Stobæus: for, observes Mr. W. '*Ad ingenium redit hic quoque V. D. offam putidam, N finalem dico, lectoribus ingerens:*'—*secondly*, from Mr. Porson's having taken in V. 1169. ἢ νῦν λέγει τις, ἢ πάλιν μέλλει λεξειν, with a comma after it, from Stobæus, instead of altering the Aldine, λέγων ἔσθ' τις ἢ μέλλει into "ΛΕΓΩΝ ΕΣΤ', η παλιν μελλει λεγειν." with a full stop, as Mr. W. would give it;—and *thirdly*, for not having φρασω. with a full point after it, instead of φράσω.

In the first place, ειρηκε κακῶς either gives a *Trochæus* in the fifth place, or a *Dactylus* in the fifth, and a long syllable in the sixth.

In the second, λέγει τις is far preferable to λεγων ἔσθ', as it is more suited to the language of Tragedy, and as it forms a part of Stobæus's lection, from which Mr. W. himself is obliged to take πάλιν.

In the third, a full stop is more than the sense of the passage can admit after φράσω.

1172.—— Ὁ δ' ἀιεὶ ξυνὶυχων —— ALDUS.

R. P. Ἀεὶ Stobæus. *Recte hujus vocis penultimam communem esse statuit Piersonus ad Mœrin*, p. 231.'

Mr. Porson had observed before in his Preface, p. iv. '*Ἀεὶ, Piersono jubente, Brunckio non nolente, semper sine diphthongo scripsi; idem facturus in* αἴξ, κλάω, *et* κάω.'

On Mr. P.'s note, these sentiments are delivered by Mr. W.

'Ἀει——*Certe, illa vox syllabam* penultimam *habere nequit: hoc autem humanitus admissum egregio viro condonemus; uti nos multa similia habemus condonanda, atque condonari cupimus: at Piersono tamen, vel alii cuilibet, ita statuenti, credat, qui volet:* —— εγω δε τις ὁ ταχυπιθης. *Longe similius vero videtur existimare, quoties priorem syllabam porrigerent Atticos scripsisse* αει *vel* αιι· *quum corriperent rursus,* αι *possuisse. Sed libera sint hominum judicia.*'

As to the word *penultima*, its supposed impropriety, in a great measure, rests with Pierson, to whom Mr. Porson refers: but we must beg leave to observe that neither the writers in the Attic, nor in any other dialect, could possibly have written αει, (that is, a word formed of *alpha* with an *iota* subscribed, *epsilon*, and *iota*,) instead of ἀιεὶ: *for an iota can only be placed under a long vowel;* and it is sufficiently clear that this *alpha* is not long invariably. This is the quantity, however, of the *alpha* in κλάω, αἴξος, and in such other vocables as lose the *iota* Ἀτθικῶς, and have it subscribed, Ἑλληνικῶς.

It has long been our opinion that the antient Attics *always* wrote ΑΕΙ. We owe it to Dorville and Pierson, and observe with pleasure its confirmation by the note of Mr. Porson.

The

The uniformity with which ἀεὶ was printed in the Glasgow edition of *Æschylus* did not escape our notice; and to those who may have any doubts on this subject, we beg leave to recommend a careful perusal of the Great Etymologist's account of Ποιῶ, with Dorville's note on Chariton, p. 288. and Pierson on Mœris, 231.

1260. Θανοῦσα δ' ἡ ζῶσ' ενθαδ' ἐκπλήσω βίον; a verse, in which Brunck and Ammonius change βίον into μόρον, which, as Mr. P. justly observes, signifies *mors*, in the Tragedies; and Musgrave proposes πότμον, which our new Editor approves, as the same *varietas lectionis* is found in Sophocles, Antig. 83.

Mr. W. defends the old reading, and gives an explanation; and he adds some words from the Scholiast, of which he says: '*Quæ* SELEXI, [meaning *selegi*;] for these *Scholia*, I think, are the works of different Grammarians, in different ages.'

Πότμον undoubtedly renders the verse intelligible. As it stands, our comprehension cannot reach it; nor in our opinion, can Mr. Wakefield's interpretation be allowed. As for his selection from the note of the Scholiast, such an abridgment is completely unjustifiable.

With this remark concludes the *Diatribe* on Mr. Porson's *Hecuba*. We have attempted to examine every single criticism, separately and distinctly; and it has been our wish to perform this duty with firmness, but without asperity. How far this desire has been accomplished must be left to the decision of our readers.

* * * *

Since these observations were written, as we accidentally were turning over a copy of Mr. Wakefield's *Diatribe* belonging to a friend, we observed that some pages had been cancelled. To prevent misrepresentation, we shall lay the alterations before our readers:

P. 16. In the note on the word ἐξέπλαξας in V. 181 of the *Hecuba*, which has been quoted, this concluding passage is wholly changed: '*Nimirum vel capiendum est* pro ἐξεπλασας, *a* πταω πτημι, *volo; vel scribendum* ἐξεπλοασας, *a* πλοεω, *terreo. Utrum mavis accipe.*' Instead of these explanations, or whatever they are to be called, we found this question: '*Nam vox*, quiescentis *statum significans, unde possit describere* moventem?'

As we made no remarks on the old paragraph, we shall now leave the new one to the unbiassed observation of the reader.

In p. 24. we stated that an alteration with a pen had been made, in order to remove the *Spondeus* in *quarta sede* in V. 508. The leaf has been changed, and the whole line is thus published:

Σ' Αγαμέμνονος πεμψάντος, ω γυναι, μέλα.

and this conclusion of the note is left out: '*Quis enim σιγματισμον in Euripide saltem damnet?*'

In the note on V. 565. p. 25. the name of Captain Cook is changed into that of Wallis, Mr. Wakefield having mentioned the former by mistake.

Page 37 has also been cancelled. In line 25 we find, quæ *selegi*, instead of quæ *selexi*, as it stands in our copy; and in the following page, 38, *inter eruditos—non—obtrectatores, sed laborum —— socii participesque ——* is rightly corrected into *inter —— socios ——*; as in p. 39. l. 21. we observe *ad hoc autem inhumanitatis scopulum* altered properly into *ad hunc —— scopulum.*

There may be other alterations, but these are all which we observed.

In another Article we hope to conclude. Critical investigations, if intended to examine any questions *thoroughly*, do not readily admit curtailment. From the nature of Mr. Wakefield's pamphlet on the New *Hecuba*, it was impossible to satisfy our readers, or ourselves, with mere assertive contradictions. It was necessary to search deeply into every remark, in order to prove the solid and unshaken excellencies of Mr. Porson's edition of Euripides.

D^r. C. B....y.

[*To be continued.*]

Art. XIII. *An Introduction to Arithmetic and Algebra.* Vol. II. By Thomas Manning. 8vo. pp. 218. 4s. Boards. Rivingtons, &c. 1798.

The first part of this work was noticed in our Review for February 1797.—The contents of the present volume are, Proportion of varinble Quantities, Rule of Three, Reduction, Arithmetical and Geometrical Series, Incommensurables, Application of Algebra to Rectilinear Geometry, Surds, Greatest Common Measure of Algebraic Expressions, Properties of Numbers, Logarithms.

The chapter on Incommensurables is drawn up with much neatness and perspicuity*; and, in a scholium, the author sums up forcibly, and with precision, the arguments diffused over the two lectures of Dr. Barrow, in which that great Geometrician defends Euclid's definition of Proportionality. We give a short extract:

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* The 95th article, however, appears to us imperfect in its enunciation and proof; for *q* must be the *same* multiple of *b* that *p* is of *a*.

' Various

'Various objections have been urged by different writers against Euclid's definition of proportionality. Some have censured it as obscure and difficult to be understood; but that fault, if it exists at all, is in the subtil nature of incommensurable magnitudes, and not in Euclid's definition. Others have complained that they cannot, without a demonstration, discern whether quantities, that agree with the definition, are proportional or not; as if proportionality was something independent of definition. Others again, defining numbers to be proportional, when the quotient of the first divided by the second is equal to the quotient of the third divided by the fourth, have endeavoured to obviate the necessity for Euclid's, by extending this their definition to all magnitudes whatsoever; thereby endeavouring to confound the distinct natures of commensurable and incommensurable quantities; for what is the import of the expression, $\frac{A}{B}$, when A and B are incommensurable with each other? A logical answer to this question would distinguish again what they thus endeavour to confound and blend together, and would satisfy the enquirer, that if he would have an accurate knowledge of the real nature of magnitudes, he must take the trouble of examining into the doctrine of Incommensurables, and at the same time shew him, that in point of conciseness nothing is gained by thus endeavouring to elude Euclid's distinctions, and in point of perspicuity much lost; the enquiry being of that nicety and subtilty, which cannot be easily d'spatched in few words.'

The chapter on the Application of Algebra to Rectilinear Geometry is a valuable one: but we wish that the author had expressed differently the addition, subtraction, &c. of ratios. We are, indeed, previously informed what the symbols denote: but the ideas annexed to them, in their common signification, so frequently recur and intervene, that the mental progress is considerably impeded.

The explanation of logarithms is intelligible and satisfactory.—The logarithmic series is demonstrated by a process purely algebraical. If $1+a$ be the base of the system, then y is the logarithm of the number $\overbrace{1+a}^{y}$.

If $\overbrace{1+a}^{y}$ be assumed $= 1 + by + cy^2 + dy^3$ &c. then b may easily be shewn equal to $a - \frac{a^2}{2} + \frac{a^3}{3}$ — &c. and by a very ingenious method (for which the author acknowleges himself in some degree indebted to a work of M. de la Grange *,

* Books from France, however unconnected with politics and religion, make their way into this country with so much difficulty, that it was not till very lately that we could procure this work, although printed in 1797. We hope, however, to notice it in our next Appendix: which will be published at the same time with our Review for May.

Théorie des Fonctions Analytiques) the law of the dependence of *c*, *d*, &c. on *b* is strictly determined; whereas Mr. Bonnycastle is obliged to prove by actual involution that $2c$, $2 \times 3.d$, $2 \times 3 \times 4.e$ &c. are the square, cube, biquadrate, &c. of the quantity $a - \frac{a^2}{2} + \frac{a^3}{3} -$ &c. *

The Appendix contains observations on Impossible Quantities, and on the use of the negative sign. Of the first volume, we have already expressed our favourable opinion; and the second is not less entitled to commendation. The whole work is valuable for the evidence of its principles, the precision of its language, and the rigour of its proofs.

Wood....e.

ART. XIV. *Flora Londinensis.* By William Curtis. Folio. Vol. II. 4l. 10s. in Sheets, plain; coloured 9l. White.

AT length this great and scientific work is closed: not from the subject being exhausted;—very far from it:—but from the ill state of the author's health. Mr. Curtis has, with much difficulty, conducted it to the end of the sixth fasciculus, which concludes the second volume: but there is no striving against debilitated nerves, and a shattered constitution. It can proceed no farther!—The Botanist will naturally lament on receiving this intelligence, and in vain he will endeavour to repair the loss which the science must sustain.

We gave a very ample account of the first volume of this splendid and valuable publication in our *seventieth* vol. p. 1.—On a review of that article, there seems to be nothing which we could wish unsaid. The work has to boast of unrivalled excellence, undiminished splendor, unabated accuracy, and is still patronised by the learned and the munificent. There is scarcely a name of any consequence in the botanical world, which is not recorded as a contributor, or a friend, to the richness of the observations contained in it. The specimens, from which the figures are drawn, are uniformly well chosen, and remarkable for their characteristic significance; the colours are vivid and expressive; and the dissections of the flowers are uncommonly well executed, and will prove more didactic than the very lectures of any but superior teachers.

To carry science to perfection, the life of man should be doubly lengthened.—The ordinary allotment of time enables an individual to form a general outline of much, but to work

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* See his method for determining Logarithmic Series, in Addenda to Hutton's Dictionary, or in Monthly Review for April 1798, page 379.

out

out the detail (so that others may profit from it) of a very little. Then again the different wants, not to say the different employments and pursuits, of a man, are perpetually clashing, and thwarting each other; so that the very little which he could do is oftentimes made less, and not unfrequently rendered wholly abortive. This, however, is an evil inseparable from the nature and condition of Man; and we are not to repine at our lot. Doubtless, Providence ordered it thus for general wise and beneficial purposes. No labour of man, howsoever conducted, is incapable of making those who come afterward either wiser or better.

Adverting to the clashing of different pursuits, many have regretted that Mr. Curtis should have undertaken two such works as the *Flora Londinensis* and the Botanical Magazine; arguing that, had he confined himself to the *Fl. Lond.*, we should have had a more ample storehouse of botanical treasure. Undoubtedly we might: but, at the same time, there is much impropriety in this remark. The public had no right to call on him thus to confine himself; and, if it be duly investigated, self-interest will be found to have suggested the idea of this complaint: for it must have been raised by hopes of self-advantage from his confined labours, and self-improvement. It must be obvious to every person of common understanding, that the *Flora* was conducted on too expensive a plan to have been very lucrative to the author: but it is "*Diva pecunia*" which must of necessity regulate many of the actions of mankind.

The much-esteemed Botanical Magazine is simple in its plan, easy of execution, accommodated to the MANY, and making its way by its neatness and its cheapness, where more costly works would never have been known. Perhaps the cause of Botany, therefore, through the execution of this work, and the example which it gave to its spirited, rapid, and charming follower, ENGLISH BOTANY, has been more effectually promoted, than by any other publication during this century. The very support of the *Fl. Lond.* was centered to a certain degree in the success of the *Magazine*, so that the public was a gainer, not a loser, on the whole; and, all the while, the slow progress of the *Flora* enabled the author to give to it that consummate perfection, which nothing but very deliberate progress could accomplish. The flow of emolument from the Botanical Magazine enabled the author to be so deliberate, so accurate, and in consequence so peculiarly instructive, in his *Flora Londinensis*.

In appreciating the merit of the *Flora*, we should not overlook the general foundation which it has laid for the exten-

sion of botanical knowlege and botanical improvement, to the end of time. Let systems vary as they may, the descriptions of the *Fl. Lond.* must be of prime utility to every one of them. All the parts of the plant are so well described, the characteristic difference of every species is so expressed in every figure, and the minuter parts are so displayed in numerous and magnified dissections, that no system can be invented which will not be aided by them; and no lapse of time can occur, when such truth of nature will not be equally valuable.

We lament that Mr. Curtis was led, by bad counsel, to discontinue figuring the Mosses and Lichens, on the idea that Dillenius had anticipated all labours in that department.—Experience teaches us otherwise, and that his figures are too small to supersede the necessity of farther illustration. Close affinities are not easily distinguishable by the Dillenian method of figuring them. In Mr. C.'s work, there is such a bold representation, that the minutest part appears tractable and tangible:—no publication, except the costly work but impracticable system of Hedwig, can be said to exceed this, in conveying just notions of the construction of this wonderful tribe of vegetables.

The *Flora Londinensis* will ever remain a monument of the author's taste and singular abilities. Compared with the works of the veteran, Jacquin, we may say, "*Vitulâ tu dignus & hic.*"—Compared with the *Flora Danica*, we may ask, not without due regret, "Why was not the FLORA LONDINENSIS also honoured with Royal Patronage?"

Good.....h.

ART. XV. *A Treatise on Mortal Diseases;* containing a particular View of the different Ways in which they lead to Death, and the best Means of preventing them, by Medical Treatment, from proving fatal. Translated from the Latin, by the Author, Conrad George Ontyd, M. D. 8vo. pp. 643. 9s. Boards. Johnson. 1798.

THIS volume exhibits the principal facts relating to the causes of death, compiled from various sources, and arranged under different heads. The author forms them into the seven following classes;

1. Death from old age.
2. —— —— passions of the mind.
3. —— either from the abundance or want of caloric.
4. —— from the electric shock.
5. —— —— different kinds of gas, noxious to the animal œconomy.
6. —— —— Poisons.
7. —— —— Universal diseases.

Dr.

Dr. Ontyd has exerted a very laudable degree of industry, in reducing to their several classes the great variety of facts which his plan comprehends. Of such a work, accuracy and fidelity must form the principal merit, and we think that he is fairly entitled to the praise resulting from them; yet, from the extensive nature of the undertaking, some parts are necessarily compressed into too small a compass. The history of fever, for example, is contained in a few pages. The enumeration of symptoms and remedies appears to us too indiscriminate and unsatisfactory; and the author sometimes recommends, without qualification, remedies which may be commonly used in Germany, but which are by no means generally employed in this country.

In the most dangerous stages of typhus, for example, he directs the *leopard's bane* to be used; a medicine which has not yet acquired the confidence of practitioners in this island.

Dr. O. has proposed to inoculate for the plague, with the view of rendering it milder. This proposal he would probably have suppressed, if he had recollected that the same person may undergo the plague repeatedly, and that inoculation can be advantageous only in diseases which are capable of affecting the system but once.

In treating of the Dysentery, (p. 224,) the author defines it to be a *catarrhal affection* of the intestines. This opinion, which, to many of our readers, would require the aid of another definition, he explains afterward, by observing that, in the dissection of several dysenteric patients, he had found inflammatory affections of the small intestines; which he therefore concludes to be the seat of this disease, in opposition to the doctrine of Sir John Pringle, and other eminent physicians.

In the management of this complaint, Dr. Ontyd begins with exhibiting an emetic; he afterward gives calomel, in doses from five to twelve grains; and then he throws in opium. He deems calomel preferable to the neutral salts, as a purgative in this disease; and he seems to impute a peculiar anti-dysenteric quality to it. We think that the Doctor's objections to the use of neutral salts are not well-founded. We have frequently seen nearly as much relief produced immediately by a dose of Glauber's salt, in cases of dysentery, as can be obtained from a full dose of opium in any instance of spasmodic pain.

In prosecuting the cure by means of opium, the Doctor advises the use of very large doses; and undoubtedly where a medicine like opium is indicated, the measure of the dose must be the quantity of effect produced. Much caution, however, is necessary, in increasing it beyond the usual limits.

On the subject of Caries, Dr. Ontyd mentions a practice which is not known, we believe, in this country. He informs us that the first account of the efficacy of asafœtida, in caries of the bones, was given by Mr. Schmucker, surgeon-general to the army of the late king of Prussia; in whose work several cases of this disease are mentioned, which resisted all other remedies, but gave way to the use of asafœtida. On this authority, Dr. Ontyd gave this remedy to a girl, ten years of age, who laboured under a caries of the lower part of the thigh-bone, communicating with the knee-joint. The disorder was of two years' standing, when he saw her; and many medicines had been tried, without success. She took the asafœtida, to the quantity of a drachm a-day for some weeks; with such effect, that several pieces of bone came away, the ulcer closed up, and the girl did perfectly well, though the motion of the knee-joint was in a great measure lost. He adds that he is much inclined to believe that asafœtida is nearly as good a specific in caries and necrosis, as the bark in agues, or mercury in syphilis. It would require a very considerable degree of experience to confirm this opinion. In the case mentioned by Dr. Ontyd, it is possible that the use of the medicine might be begun about the time when the exfoliation of the bone was taking place, by the powers of the system alone. Observations, in which all essential circumstances are not well distinguished, tend more to mislead than to instruct; and we remark, in the writings of many German physicians, a disposition to prefer trifling remedies, on account of novelty in their application, to some of the most effectual and important substances of the Materia Medica. We feel the more diffidence respecting the alledged efficacy of Dr. O.'s remedy, because he decries the practice of perforating the bone, in caries and necrosis, which is an established method among the most intelligent surgeons in this country.

As an external application, in caries, our author recommends lime-water.

In the remaining part of the volume, Dr. O. seems to lose sight of the proper subject of his work, in his zeal to combat the chemical pathology lately introduced by Dr. Trotter and Dr. Beddoes. He enters, at large, into the question of the origin of Scurvy, and notices very briefly the modes of its fatal termination. We shall extract the general view of the different ways in which he supposes life to be destroyed, from the conclusion of the book:

'All the differences of death, on account of the analogy which exists between them, may be reduced to a few classes; so that I have ranked the morbid stimuli operating by extinguishing the vital principle

principle in seven, and those which prove mortal either by impeding or destroying the function of one or two vital organs in five. The differences of dying belonging to every class may likewise be easily accounted for; because they do not exceed a certain and determinate number, as will appear on taking a general view of each of them.

'In *the first class*, where death is the consequence of the mechanism of the body, man dies by the too great rigidity of the solids, and by their insensibility to stimuli. Such a state of the system, with the manner of dying dependant on it, is brought on the solids merely by life itself, without the least morbid cause, and is therefore distinguished from all the other classes, which destroy life by the operation of a morbid stimulus.

'In *the second class*, in which death follows the too violent passions of the mind, the patients are destroyed either by an apoplexy, syncope, or suffocation. All these differences of dying therefore agree in this, that an accumulation of the blood takes place in some vital organ, which, overwhelmed by the too great quantity of blood, ceases to act. Though thus various organs are affected, according to the various passions, and the different constitutions of the persons attacked, nevertheless the patients are always carried off in this class by the impeded function of some vital organ, arising from the congestion of the blood.

'In *the third class*, where death is occasioned either by the excess, or want of *caloric*; if the patients be carried off by too great cold, the blood is always driven to the internal organs, and life is extinguished in the same manner as in the foregoing class. The same seems to happen, where the patients die from superabundant heat. It is indeed true, that hitherto nothing certain is proved as to the immediate cause of death in this case; yet if we consider the phenomena accompanying too great heat, it will appear, that, if not always, at least in most cases, life is destroyed either by apoplexy or suffocation.

'In *the fourth class*, where death is produced by too great electricity, the life of all the organs is abolished, as it were, at a single shock, by the violence of the stimulus, so that the patients are immediately found insensible even to the most powerful stimuli. Thus they die by a sudden extinction of the vital principle.

'In *the fifth class*, where death happens from some *gas* noxious to the animal economy, though the symptoms greatly differ, according to the various species of gas, the patients always die from suffocation.

'In *the sixth class*, where death is produced by poisons, though at the first view nature does not appear to pursue a certain order as to the manner of dying, and though, besides, the true manner in which many poisons kill has hitherto not been properly investigated, nevertheless, upon a more accurate consideration, it seems, that the different ways of dying by poisons are also not numerous; but that nature, even in this class, follows constant laws, and, indeed, by all that I have above said of the poisons, the patients in this class seem to die only in four ways; for all poisons operate either by abolishing the vital principle by the violence of their stimulus; by destroying the action of either the brain, the heart, or the lungs; by producing gangrene of the *primæ viæ*; or, lastly, by secretly and insensibly destroying

stroying life. In the last case, the organs becoming by degrees altered in their structure, and insensible to their usual stimuli, a tabes ensues, accompanied with a hectic fever, which terminates in death.

'In *the seventh class*, where death is brought on by universal diseases, disorders are enumerated, which are quite opposite to each other; and hence it must follow, that many differences of dying also appear in this class. Yet the patients are only carried off in six different manners; for they die by the extinction of the vital principle by the too great violence of the morbid stimulus; by the impeded function of either the brain, the heart, or the lungs; by a local inflammation; by the gangrene of some vital organ; by an alteration of the organical structure in the alimentary canal, by which a colliquative flux of the belly is produced, which is to be stopped by no medicines; or by the depraved action of the organs serving to the secretion of sweat, in which case the whole body is, as it were, consumed by perspiration.

'In *the eighth class*, where death succeeds to inflammation, nature is not less observant of constant laws; and the inflammation of any *viscus* whatever leads to death only in four ways; by violent convulsions; by the function of either the brain, the heart, or the lungs, being destroyed; by the violence of the inflammation, by which the vital principle is often quickly abolished, in consequence of the suppression of a vital function; or by the gangrene of some organ succeeding to its inflammation.

'In *the ninth class*, where death arises from different fluxes, all the differences of dying may be reduced to the five following: spasm, by which nature in vain endeavours to restore the disturbed equilibrium; the loss of too great a quantity of blood, by which the patients fall into a fatal syncope; the impeded function of some vital organ; sphacelus of the alimentary canal; and a peculiar degeneracy of the intestines, by which the patients are continually impelled to go to stool with extreme prostration of strength. If the last be attended with tenesmus, it is called a chronic dysentery; if not, it is named a colliquative diarrhœa.

'In *the tenth class*, where death is occasioned by cachexies, though I have brought into it many diseases, nevertheless the differences of dying do not exceed ten: for death is produced by the consumption of some organ requisite to life, or from the destruction of the tone of the whole body by the violence of the stimulus, which is the manner in which phthisis destroys; by the violence of the noxious stimulus, which weakens the solids daily more and more without the consumption of any vital organ, as is the case in the lues venerea, scrofula, rachitis, &c.; by suffocation, by which those who labour under the dropsy of the thorax, are generally carried off; by apoplexy, in which a general dropsy not unfrequently terminates; by syncope which manner of dying is particularly common to the scorbutic, on account of the torpor of their vital principle; by hemorrhage, by which the flame of life, already deadened by the disease, is totally extinguished; by a colliquative flux, which puts an end to life, by depriving the body of its remaining energy; by the sphacelus of some organ; by the violence of the morbid stimulus, by which life

is

is quickly abolished, a manner of dying, though unfrequent in the diseases of this class, sometimes happening in the sphacelus; and lastly, in mortification, the absorbed ichorous matter, when not subdued by the vital powers, sometimes produces a malignant fever, which carries off the patient in different ways, according to the various circumstances.

'In *the eleventh class*, in which death is occasioned by disorders of the nervous system, the different ways of dying are not so numerous; for in the same manner as all the nervous diseases may be reduced either to spasm, or atony, so likewise the chief ways of dying in this class are only two, and life is generally abolished either by violent spasms, or by an apoplectic fit.

'In *the twelfth class*, in which death succeeds to the diseases of the secretory organs, three different ways of dying occur; namely, either the noxious stimulus, stealing on to destroy life, by slow degrees oppresses it, as is the case in polysarcia; the solids become enervated, and altered in their structure, either by the continually stimulating noxious power alone, or both by this, and the exhaustion of the blood for a secretion of a peculiar kind, in each of which cases they are destroyed by a hectic fever accompanied with its usual symptoms; or the vital principle is abolished by the impeded or destroyed function of the brain, heart, or lungs.'

On the whole, we think that Dr. Ontyd's book is a respectable production. If it should add little to the mass of knowlege, it is one of those compilations which may be perused with advantage by the student; and to those who are ignorant of the German language, it possesses the recommendation of making them acquainted with the opinions and practice of several eminent physicians of that nation, on many subjects of great importance to every class of practitioners. Fer...r.

MONTHLY CATALOGUE,

For APRIL, 1799.

EDUCATION.

Art. 16. *An Essay on the Education of Youth.* By John Evans, A. M. 12mo. 1s. Symonds.

In a short essay on so very comprehensive a subject as that of education, only a rapid glance can be expected. The present pamphlet, however, discovers its author to be qualified for superintending the education of youth, and in course must recommend him and his seminary. It is justly observed by Mr. Evans, that 'Education, in its most extensive sense, embraces every thing that is valuable in the character of man.' To the acquisition of literature and science it is generally confined: but we think that it ought to include whatever tends to perfect the animal *Man*, both in body and mind. What is called Learning, when acquired at the expence of health, is too dearly bought. Men then become the dupes of superstition; and display, together with much reading,

reading, all the effects of a debilitated nerve, owing to an inattention to corporeal vigour during the period of education. In pursuit of the *mens sana*, the *corpus sanum* should not be forgotten.—Mr. E. has mentioned a great variety of books to be read in his course of education: but to young persons, particularly, an observation of Pliny applies—"*multum legendum esse non multa.*" We have often thought that books alone should not be considered as the sources of acquirement to the rising generation. Recreation may be made subservient to science; and the knowlege of different figures, lines, and curves, and the solution of certain problems, may be taught in the play ground. An ingenious master might invent a variety of exercises which would strengthen the body, and at the same time convey useful knowlege to the mind;—knowlege which could never be forgotten.

Mr. Evans places *French* among the *ornamental* branches of education: but it is surely a language more useful to the modern than *Greek*; and both to the merchant and the scholar it is essential. He owns that of late it has risen into importance.

On the whole, it is evident that Mr. E. has it warmly at heart to train the pupils in his seminary to knowlege and virtue;—and to make them enlightened, pure, and useful members of the community.

Moo-y.

IRELAND.

Art. 17. *A Letter to the Right Hon. William Pitt.* 8vo. pp. 48. Moore, Dublin. 1799.

Art. 18. *A Second Letter to the Right Hon. William Pitt.* 8vo. pp. 50. Folingsby, Dublin. London, Robinsons.

A few years ago, we introduced the animated writer of these letters (Dr. William Drennan *) to the notice of our readers, by the account which we gave of his Patriotic *Letter to Earl Fitzwilliam*; see M. Rev. *New Series*, vol. xvi. p. 450.

Still impelled and urged on by the same principles, and the same public spirit, (a spirit which may be regarded as characteristic of a "*true-born Irishman*,") the Doctor now zealously opposes the projected Union between the Sisters, Britannia and Hibernia; and he manifests an uncommon degree of—(we are sorry to add the word) *inveteracy*, on the occasion. He attacks the political character and conduct of Mr. Pitt in a most cavalier style, and boldly threatens to 'pursue him through the measure.' In a word, Dr. D. may be considered as the Demosthenes † of Ireland, and our Premier as the present object of his *Philippics*.—For a farther idea of the peculiar style of his bold and figurative eloquence, we may refer to our account of his abovementioned Letter to Lord Fitzwilliam.

Before we perused the whole of these two letters to Mr. Pitt, we imagined, from Dr. D.'s uncommon candour respecting the Roman Catholics of Ireland, that he was of that persuasion: but he here de-

* Physician in Dublin, we suppose.

† The *writing* Demosthenes we mean; not knowing whether or not the Doctor has been equally distinguished as a *Speaker*.

clares

clares himself 'a protestant dissenter:' need we add that he appears to be a zealous one?—In whatever cause he is embarked, we may rest assured that there will be no deficiency of *warmth* in his attachment.

Art. 19. *No Union! but Unite and Fall.* By Paddy Whack, of Dyott-Street, London. A loving Letter to his dear Mother, Sheelah, of Dame-Street, Dublin. 8vo. 6d. Dublin printed; London, Richardson, &c. 1799.

There is a kind of St. Giles's broad humour in this effort of Irish loyalty, that seems to speak this little pamphlet not ill calculated to produce some good among the poor Paddies, resident in either of the sister-islands.—Paddy Whack thus endeavours to convince his countrymen of the absurdity of expecting any benefit from a connexion with the French:

'They that wish to make us fat, by Jazus, by depriving us of our food! they that wish to make us warm, by stripping us of all our dirty duds, and all our woollen and linen shabby bits of feathers! they that wish to make us aisy, my honey, by dragging their guns, and flogging us through lough and through bog! they that wish to make us free, by being such foes to all Union, agra! as to disunite our very heads from our very bodies, for the good of our very souls! And they that wish to make us rich, my jewel, by robbing us of every living and dead thing that might sell for a single copper in Copper-alley.'

Art. 20. *A Letter addressed to a Member of the Irish Parliament,* on the Subject of the proposed Union between Great Britain and Ireland. 8vo. 1s. Murray and Co. 1799.

The calamities with which Ireland has been afflicted are ascribed, by the writer of this letter, to an inveterate and tyrannizing aristocracy; to a mad populace driving headlong into the fraternal embrace of French republicans; and to the exclusion of three-fourths of the people from the benefits of civil government, completely separated from it in religion, interests, manners, education, and in a great measure even by language. In asserting the necessity of an union, he says, 'The French are consolidating their force, we should condense ours: they are desirous of weakening the connexion.'—'What then remains for us to do? Let us at least learn from our enemies the important lesson of being *one and indivisible.*' The author advises us, likewise, to put a check on the aristocracy, and to turn the tide of Catholic 'opinions from its course towards republicanism, into a direction which shall strengthen the country.'—There is much good sense in this little treatise:—but we dissent from some of the author's opinions respecting the competency of Parliament, and not less from the character which he gives of Mr. Locke. Capt. B...y.

Art. 21. *Ireland profiting by Example;* or, the Question whether Scotland has Gained, or Lost, by an Union with England, fairly discussed. In a Letter from a Gentleman in Edinburgh to his Friend in Dublin. 8vo. 1s. Chapple.

The writer of this pamphlet holds out, as an encouragement for Ireland to imitate the example of Scotland, the many improvements which have taken place in the commerce, population, &c. of North

Britain, since its union with this country. Without admitting that the increased prosperity of Scotland is *wholly* to be considered as the effect of the Union, we willingly agree with the author (as we have elsewhere observed) that, since that period, the legislature of Great Britain has shewn the most liberal attention to the interests of that country.

Capt. B....y

Art. 22. *Considerations on the Competency of the Parliament of Ireland to accede to an Union with Great Britain.* By the Right Hon. Charles, Viscount Falkland. 8vo. 6d. Wright. 1799.

The noble author of this small pamphlet professes that it is not his intention to be very rigid in his examination of this question. He says, 'In the following very short view of the subject, I shall endeavour to prove, that the Parliament of Ireland has, constitutionally, the right of acceding to the proposed Union; and I must beg it to be understood that I am not entering into a discussion of the merits of the principles on which the Constitution is founded, but that I am only attempting, by arguments derived from that Constitution as it now stands, to prove that the Parliament (by which I always mean the Three Estates acting in unison) has that right vested in it.'

As doubts respecting competency did not occasion the rejection of an union, nor appear to offer much impediment, the question is of the less importance. The practice in Great Britain, in most cases that are of such magnitude as to involve any change in the constitution, has generally been that, when the proceedings of Parliament have been silently admitted by the country, such silence has been interpreted, and perhaps not unfairly, to be the public consent. When any measure affecting the Constitution is undertaken by Parliament, of which the people at large shew their disapprobation, the competency of Parliament then indeed becomes an important question.

D.o

Art. 23. *Reasons for adopting an Union between Ireland and Great Britain.* By the Author of the Letter to Jos. Spencer, Esq. 8vo. 1s. 6d. Chapple.

A legislative Union is considered by this writer as the only certain method of perpetuating the connection between the two countries. The advantages which Ireland would probably derive from an Union, he says, may be conjectured by the effect of the Scotch Union; on which he remarks that, contrary to the apprehensions which were entertained, the United Parliament has always been liberally attentive to the interests of Scotland. This seems the most reasonable part of his argument.—The politics in the following paragraph appear to depend too much on the principle of expediency:

'We have hitherto endeavoured to secure the connection, and promote the prosperity, of the two countries by a simple Union of the executive authorities of each, with distinct and independent legislatures. A connection more slight could scarcely be imagined; we touch politically in a single point only—between countries of equal strength and power, such an Union would not have lasted a moment; and where it has taken place between a greater and inferior country, every step that diminishes the inequality between these, lessens the probability of its continuance; this consideration will, of necessity, determine

determine the superior to preserve its relative condition inviolate. If the continuance of the connection be an object with the superior country, she will find the strength of it to depend upon maintaining her advantage.'

In examining the question respecting the competency of the Parliament of Ireland, the author decides that the prerogative of the crown, the privileges of the people, and 'the duration of Parliament itself, are subject to its control.'—'It has occasionally limited and prolonged its own existence.' According to these *data*, nothing can be more clearly demonstrated than the following position advanced by the author: 'nor can their power, *while the Constitution lasts*, even be controlled by an adverse will on the part of the people:' for, with the *right* or the *power* (we believe that the author means both) to continue itself indefinitely, a legislative assembly may be considered as perfectly independent of the will of the people.

Capt. B....y.

LAW.

Art. 24. *Observations, &c. upon the Act for taxing Income;* in which the Principles and Provisions of the Act are fully considered, with a View to facilitate its Execution, both with respect to Persons chargeable, and the Officers chosen to carry it into Effect. With the Act at large. Together with the Substance of Clauses of the Assessed Tax Act that have a Reference to this, and a Copious Index, referring both to the Act and Observations. 8vo. pp. 270. 4s. 6d. Bunney and Gold.

Art. 25. *The Substance of the Income Act,* in a methodical Arrangement of all its Clauses, transposed, as nearly as possible, according to their natural Connection with each other; intended to give to general Readers, without much Labour, a clear Idea of all its Provisions. By Stewart Kyd, Esq. Barrister at Law. 8vo. pp. 60. 1s. 6d. Hurst.

The object of each of these two publications is to explain, with clearness and precision, the intentions of a complicated and universally interesting act of parliament, and the modes to be observed by the different persons named in it.—We have consulted them both, and have felt our minds relieved from doubts and satisfied by the remarks and explanations contained in their respective pages.—The *alterations* in the Income act, recently made by Parliament, in course occasion some variations in these pamphlets.

S.R.

Art. 26. *A Treatise on the Study of the Law,* containing Directions to Students, written by those celebrated Lawyers, Orators, and Statesmen, the Lords Mansfield, Ashburton, and Thurlow, in a Series of Letters to their respective Young Friends; with Notes and Additions by the Editor. 8vo. pp. 160. 3s. 6d. Harrison and Co.

This work is professedly a compilation 'from all the best writers on the same subject,' and the letters from Lord Mansfield and Lord Ashburton form the best and most useful part. On the strength of

internal evidence, we feel little difficulty in declaring our opinion that the letter imputed to Lord Thurlow was never written by him; for it is altogether unworthy of his talents and experience.

Of Lord Mansfield's letters, the first contains instructions for the study of antient history, previously to entering on the study of the law: the second is on the study of modern history, and the directions contained in it are judicious: but, in the interval between its being written and published, some books of high authority have appeared, which should have been mentioned by the editor; particularly Robertson's History of Charles V. as being applicable to what his Lordship observes on the subject of the feudal system, the History of the Reformation, and that of the Germanic Empire. The editor, however, in the true style of a commentator, has introduced notes where they were superfluous, and has omitted them where they were necessary. The third letter relates to the study of English history, in which Lord M. remarks that 'the most elegant old history we have is that by Samuel Daniel, a poet of no mean rank; though he wrote more than half a century before Milton, his style appears much more modern than that of his continuator.'—The fourth letter recommends a course of law studies. All the four appeared in the European Magazine in the years 1791 and 1792, and have since been published in Mr. Holliday's life of this highly distinguished nobleman.

The letter from Lord Ashburton furnishes directions for the study of the law, and points out a course of law reading.—This is indeed an admirable composition;—superior in *epistolary* excellence to those above mentioned, and by no means inferior in point of judgment and good sense.

We cannot on any account assent to the severe and unjust censure here bestowed on the Commentaries of Sir William Blackstone; it is asserted that he presented the world with a *readable* system of the law, and *no more;* that we find in it no invention, no philosophy, no erudition. For the first quality there was no room in a didactic work, which would have been disgraced and disfigured by its introduction.—Let us oppose to this illiberal criticism the sentiments of a lawyer and a man of science, of taste, and of genius:—"His commentaries (said the "all accomplished" and universally lamented Sir William Jones) are the most correct and beautiful outline that ever was exhibited of any human science."

That part of the pamphlet before us, which gives an analysis of practice, shews evident marks of judgment, observation, and knowlege, and will be found useful by those who have not made any considerable advances in their legal studies. **S.R.**

Art. 27. *Deed of Appointment of Trustees in pursuance of the 66th Section of an Act of Parliament*, passed 38 Geo. III. Chap. 60. intitled An Act for making perpetual, subject to Redemption and Purchase in the Manner therein stated, the several Sums of Money now charged in Great Britain as a Land-Tax, for one Year from the 25th Day of March 1798, enabling and empowering any Number of Persons, whose Land-Tax shall not exceed 25s. each, to

to join in appointing a Trustee or Trustees (by Deed duly registered) to redeem their respective Land-Taxes; and enabling such Trustees to purchase the Whole of such respective Land-Taxes in one Contract. Settled by Charles N. Hunt, Conveyancer of Lincoln's Inn. A Sheet. 1s. Clarke. 1798.

In addition to the information conveyed by this title-page, we have only to observe that the deed is accurately drawn, and calculated to answer with safety the purposes of that section of the act to which it applies. S. R.

Art. 28. *Thoughts on the Law of Forfeiture, and Parliamentary Attainder for High Treason*, as applying to the Bill now depending in the Irish Parliament. 8vo. pp. 80. 2s. Printed at Dublin, and sold in London by Wright. 1798.

The author of this pamphlet is an advocate for the forfeiture of property, in cases of high treason, even where the offenders have not been attainted in their life-time: but he is no friend to the corruption of the blood of attainted persons.—We discover strong marks of good sense, moderation, and knowlege in his remarks; and those who may differ from him will be obliged to allow that his arguments are ingenious and forcible.

To the writer's opinion that the feudal law was introduced into this country by William the Conqueror, we cannot give our assent. We believe, and we are supported in that belief by the respectable authorities of Coke and Selden, (though we allow that Spelman is against us,) that the existence of feuds was prior to the Norman Conquest. The progress of the system was probably accelerated by that event: but, the situation of the Anglo-Saxons being similar to that of the other barbarous nations who overran the Roman Empire, it was natural to expect that their forms and principles of government should bear a great resemblance. The feudal law originated in the Saxon period, and arrived at maturity in the reign of William. S. R.

MEDICAL.

Art. 29. *A View of the Science of Life*; on the Principles established in the Elements of Medicine, of the late celebrated John Brown, M. D. with an Attempt to correct some important Errors of that Work; and Cases in Illustration, chiefly selected from the Records of their Practice, at the General Hospital at Calcutta. By William Yates and Charles Maclean. 8vo. 5s. Boards. Printed at Philadelphia; imported by Debrett, London.

If ever irony could be permitted on subjects which so directly concern life as reports of medical cases, we should have supposed that some wicked wag, determined to ridicule John Brown, and all Brunonians, had here undertaken to write an extravagant burlesque of their principles and practice; and that the names of William Yates and Charles Maclean were only *stalking horses, under the presentation of which he shoots his wit*. When we are told that 'pneumonia, acute rheumatism, and other diseases of this class,' are diseases of *indirect debility*, we can hardly suppose the authors to be serious; and we cannot help adopting their style, so far as to say that this is at least very *indirect sense*,—to avoid a grosser term:—but, when we find that these

positions lead the writers to decry the use of blood-letting, in cases of active inflammation, contempt gives place to more poignant feelings. Their recital of the case of one unfortunate victim, who fell into their hands, is sufficient to chill the blood of any thinking medical man. It was a case which the authors acknowlege, from the preceding symptoms, and from the dissection after death, to have been an instance of 'the most violent peripneumony.' Yet they not only justify their omission of bleeding the ill-fated patient, but they declaim against that remedy, in all stages of inflammatory complaints! Men who practise in this manner need not regret the want of variety of poisons, in the Materia Medica *. We may apply, with a slight alteration, the words of Horace, in an apostrophe to the oracle of these tremendous stimulators:

Non egent Mauri jaculis neque arcu,
Nec venenatis gravida sagittis,
FUSCE, *pharetra!*

The powers of opium might have been sufficient for such unsparing hands. We find *two hundred* drops of laudanum ordered *every hour*, in one case (p. 56); and after this had been continued during ten hours, a draught with *four hundred* drops was given. A few days afterward, draughts with *five hundred drops* each were given every hour; and glysters, with *five hundred drops* each, were occasionally thrown up (p. 58).

We should be wanting in our duty, to the younger part of our readers in particular, if we did not reprobate, in the strongest manner, the mischievous practice inculcated in this publication;—and we would recommend it to the serious attention of those who have it in their power, to prevent the repetition of such wild experiments, in *any* hospital. Fer...r

Art. 30. *Medical Strictures;* being a concise and effectual Method of treating the following Diseases, &c. &c. &c. By Richard Clarke, M. D. Author of Plans for increasing the Naval Force of Great Britain. 8vo. 1s. Richardson, &c.

An advertisement of the author's packets of medicine, which are prescribed with great brevity, as follow: "The medicines contained in the packet No. 14, *is* strongly recommended to the consumptive.' —'The medicines contained in the packet No. 9, possess the property of removing menstrual obstructions in plethoric, or full-blooded and gross habits, and those contained in No. 10, of answering the same purpose in thin, *cachectic*, and relaxed ones.'

Whatever may be the contents or the price of the Doctor's packets, we know, from sorrowful experience, that his pamphlet, price one shilling, contains nothing worth one farthing †. D.o

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* 'The powers of arsenic and other substances called poisons, are by no means well ascertained. But we have implements enough, if we knew how to use them.' *View*, p. 145 (note).

† Dr. Clarke makes a much more respectable figure as an author, in our Review for July 1795, p. 342; where our readers will find an account of his "Plans," &c. See title.

Art.

Art. 31. *A Compendious Medical Dictionary*, containing an Explanation of Terms, &c. By R. Hooper, M. D. 8vo. 5s. 6d. Boards. Murray and Highley. 1798.

A work of this nature, exhibiting a concise view of the present state of medical science, might be an acceptable present to those who are about to enter on the study of medicine: but the present performance is too brief to afford much satisfaction to the student; for it consists of little more than the mere nomenclature. This, however, appears to be all that the author intended, and he has accomplished his purpose with sufficient clearness and precision. The terms are accented, which is a considerable advantage to the learner. Fer...r.

Art. 32. *The Arguments in favour of Inflammatory Diathesis in Hydrophobia considered.* By Richard Pearson, M. D. Birmingham. 8vo. 1s. 6d. Seely. 1798.

In this pamphlet, Dr. R. Pearson undertakes to prove that hydrophobia is not an inflammatory disease, and that bleeding has never been successfully employed in it. He proposes to treat the patients with wine and aromatics, and to mix some of the mineral acids, or vinegar, with the wine. The tract is well written, and does credit to the author. Dº

Art. 33. *A Treatise on Scrophulous Diseases*, shewing the good Effects of Factitious Airs, illustrated with Cases and Observations. By Charles Brown. 8vo. pp. 168. 3s. 6d. Boards. Glendinning, Hatton Garden. 1798.

Mr. Charles Brown manifests great indignation against all men who do not recommend the use of the gases in diseases; and he enumerates a variety of formidable complaints which he professes to have cured, or to have *seen cured*, by this method. We are glad to find, however, that he does not entirely lay aside some of our old acquaintance; for several of his cures have been performed by 'change of air, plenty of exercise, with *chalybeates*,—and vital air;' and the action of the gas had been assisted, in several instances, by tonic remedies which, a few years ago, were supposed to remove diseases by their own power. This gentleman is however resolved on discoveries; and he has met with such extraordinary success in his investigations, that we cannot, in common justice, withhold them from our readers. We would allow the wisest and most experienced of our medical friends to ruminate for a month, on the nature of *strumous swellings*, before we should expect them to divine Mr. Brown's solution of them. What think you, gentlemen? They are, according to him, nothing more than lumps of soap:—but he must tell his own story:

'It will be generally found that persons who have these monstrous enlargements of the thyroid glands drink much cold water, and may not this chill these glands, and bring on this disease? It is found to consist chiefly of fat; and the alkali which enters strongly into the vascular frame uniting with this fat forms soap. The absorbents being roused into action by the vital air, which is known to produce leanness, take up this saponaceous matter, and thus the disease is removed, *citò, tutò, et jucundè.*'

Bravo! this goes off as well as Foote's lecture on the jaundice, in the Devil on two Sticks: "Those two yellow drops there

there were drawn from a patient afflicted with the jaundice—Those yellow flies give the tinge to the skin, and undoubtedly cause the disease. And now for the cure! I administer to every patient the two-and-fiftieth part of a scruple of the ovaria or eggs of the spider, these are thrown by the digestive powers into the secretory, there separated into the alimentory, and then precipitated into the circulatory; where finding a proper nidus, or nest, they quit their torpid state, and vivify, and upon vivification, discerning the flies, their natural food, they immediately fall foul of them, extirpate the race out of the blood, and restore the patient to health."

Let us however seriously advise Mr. B. to recollect, when he next presents himself to the public, that modesty, which is an ornament to the brightest talents and to the highest learning, is indispensable to writers who are but moderately gifted with either; and that a man who accuses a respectable part of the profession, of prejudice and ignorance, should be very careful to betray neither in his own performance.

Fer...r.

Art. 34. *Phthisiologia*, a Poem, miscellaneously descriptive and didactical; in Four Parts. To which are prefixed certain Preliminary and Physio-medical Observations, and Admonitions. 8vo. pp. 105. 3s. 6d. Boards. Boosey. 1798.

We are here presented with the work of a votary of Apollo, whose labours, as *Vellum* says in the play, are *two-fold*; he pays his respects to

The God of Verse and Physic too;——

and as he appears to be more conversant with the healing than the versifying power of his patron, we hope that he will direct his attention, in future, to become an accurate practitioner, rather than a middling poet. We offer this advice in pure friendship to the author, who writes with a very laudable modesty; and who seems to possess talents for observation, which only require the aid of experience, to mature them for a more acceptable introduction to the Public. It is particularly necessary for those, who attempt to please in didactic poetry,—especially when they undertake medical subjects,—to recollect Horace's rule;

Non satis est pulchra esse poëmata, dulcia sunto.

What poetical gratification can be derived from attending to the progress of the cough, hectic fever, and diarrhœa, of a consumptive patient? It is really time to put a stop to the inclination for describing disagreeable subjects. Boileau valued himself on imitating the sound of a plate rolling on the floor, and the cries of a couple of cats. Possibly, some future genius may pride himself on the resemblance of his verses to the coughing and expectoration of his patients, or to the wheezing of an asthmatic fit.

We desire that we may not be understood to give an unfavourable opinion of this author's medical talents. We only wish to impress on him the superior importance of professional skill to the empty praise of tolerable poetry. It is sufficiently difficult to deliver medical precepts, in prose, with any pretensions to correctness and elegance;

gance; and to succeed in verse requires a genius which ought to be employed on more favourable subjects. Fer...r.

Art. 35. *The Influence of Metallic Tractors on the Human Body*, in removing various painful inflammatory Diseases, such as Rheumatism, Pleurisy, some Gouty Affections, &c. &c. lately discovered by Dr. Perkins, of North America; and demonstrated in a Series of Experiments and Observations, by Professors Meigs, Woodward, Rogers, &c. &c. by which the Importance of the Discovery is fully ascertained, and a new Field of Enquiry opened in the modern Science of Galvanism, or Animal Electricity. By Benjamin Douglas Perkins, A.M. Son to the Discoverer. 8vo. pp. 99. 2s. 6d. sewed. Johnson.

By this copious title-page, the reader will be instructed nearly as well as by the pamphlet itself, in the claims asserted by this notable practitioner. The tract contains attestations of cures said to have been performed by Dr. Perkins's rods, from many medical men in different parts of America, which would provoke a smile on the sagest visage among the disciples of Apollo on this side of the Atlantic.

In one case, (p. 43,) a patient, who had received a great contusion, was cured *by the tractors* in two minutes:—but he had been bled *thrice* before their application.

At p. 54, however, we meet with a strong proof of the confidence placed in this remedy by several transatlantic philosophers. Dr. Willard, it seems, applied a red-hot piece of iron to a wart on his finger, and burnt himself very severely, in order that he might be relieved by the tractors; which are said to have given him ease in two successive experiments. The author adds, 'many have submitted to similar measures, in order to *experience* the effects. I once formed one of five, who burned ourselves so that blisters were raised, to make the experiment; we all obtained relief in a few minutes.'

This zeal for knowlege is truly edifying; especially as the tractors are generously presented to the public at *only* five guineas a pair; and it is clear that one pair would suffice to cure all the burns and scalds of a large parish. Why are not such luculent experiments repeated here? If Mr. P., or any admirer of the discovery, would submit to have a red-hot poker run into some part of his body not necessary to life, (into *that part where honour's lodged*, according to Butler, for example,) in any public coffee-house within the bills of mortality, and would afterward heal the wound in presence of the company, in ten minutes, or in half as many hours, by means of the tractors, the most stony-hearted infidel could not resist such a demonstration. Why trifle with internal inflammations, when such an outward and visible sign might be afforded?

Mr. Perkins has taken some pains, in the first part of his pamphlet, to shew that the operation of his rods is not derived from animal magnetism. In our opinion, this is an unnecessary piece of trouble in England, where there is a constant succession of similar pretensions. The *virgula divinatoria*, and the *baguette* of the juggler, are the genuine prototypes of this mystery. We were, indeed, rejoiced on Dr. Perkins's account, to find that the Connecticut Society had

only denounced him as a *Mesmerist*; we trembled lest he should have been put into the inquisitorial hands of the old women as a white witch.

To trace the relations and dependencies of projects similar to that of Dr. Perkins, would now be a work of more labour than utility. The fund of public credulity is an inexhaustible resource, for those who can resolve to levy contributions on it. In vain is the spirit of quackery exorcised in one form; it rises again immediately, "with twenty ghastly murders on its head, to push us from our stools." We, who have contemplated the progress of real knowlege during a long course of years, have seen many bubbles like this glitter for a moment, and then disappear for ever. People may talk of *Mesmerism*, or *Perkinism*, but we consider all such varieties as belonging to the old and extensive class of *Charlatanism*. Per...r.

Art. 36. *A View of the Perkinean Electricity*, or an Enquiry into the Influence of Metallic Tractors, founded on a newly-discovered Principle in Nature, and employed as a Remedy in many painful Inflammatory Diseases, as Rheumatism, Gout, Quinsy, Pleurisy, Tumefactions, Scalds, Burns, and a Variety of other topical Complaints; with a Review of Mr. Perkins's late Pamphlet on the Subject; to which is added, An Appendix, containing a Variety of Experiments, made in London, Bath, Bristol, &c. with a View of ascertaining the Efficacy of this Practice: By Charles Cunningham Langworthy, Surgeon, Bath. 8vo. 2s. Johnson.

The most material information to be gained from this pamphlet, and its title-page, which an American would style *lengthy*, is that Mr. Langworthy sells Tractors at Bath, by commission from Mr. Perkins, the original Manufacturer in London.

To what we have said on this subject in the preceding article, we shall only add that the scheme of the Tractors has at least the merit of being harmless, if it be nugatory. In this respect, its patrons are placed in a very different situation from those desperate quacks, who put unlimited doses of the most powerful medicines into the hands of their deluded followers. Even those pests of society have found means to provide themselves with evidence to the success of their compositions. They had their titles too, in days of yore. "Regulars, LINT, regulars; look at their names—Roger, bring me the news—not a soul of them but is either P. L. or M. D."

"LINT.

"Plaguy liars! Murderous dogs!" *Mayor of Garratt.* Do

Art. 37. *Remarks on Hydrophobia;* or the Disease produced by the Bite of a Mad Dog, or other Rabid Animal. By Robert Hamilton, M. D. Second Edition. 2 Vols. 8vo. 14s. Boards. Longman. 1798.

The first edition of this work was noticed in our Catalogue for July 1786. It is now greatly enlarged, and may be considered as containing the substance of every important publication, on the subject of this disease. We regret to learn, from the preface to this edition, that the author has been deprived of his sight, in consequence of a fever, and has been superseded in his situation of Physician to the

the Army, without receiving any compensation for his misfortunes by another appointment. The melancholy situation of a man of science, thus suddenly deprived of the means of usefulness and exertion, must excite the sympathy of our medical readers, and should promote the sale of a book which was much inferior to this under consideration. We feel, indeed, no hesitation in recommending this work to a place in the library of every practitioner, who wishes to be prepared with the best instructions that can be obtained, for regulating his conduct in the treatment of this deplorable complaint.

The publication itself does not admit abridgment. Dr. Hamilton seems to think that the inhalation of oxygenous gas may prove useful in hydrophobia;—any conjecture, on this subject, is certainly preferable to total despair.

Fer...r.

Art. 38. *Some new Experiments, with Observations upon Heat, clearly shewing the erroneous Principles of the French Theory.* Also a Letter to Henry Cavendish, Esq. containing some pointed Animadversions; with Strictures upon some late Chemical Papers in the Philosophical Transactions, and other Remarks. By Robert Harrington, M. D. 8vo. pp. 426. 3s. sewed. Cadell jun. and Davies.

It is not without pain that we perceive a well-meaning man entangling himself in pursuits, of which he does not comprehend the scope and the extent; and wasting, on subjects of extreme difficulty, efforts which might have procured him reputation and happiness, if they had been directed to objects more suitable to his talents. The writer before us would probably have made a respectable figure, if he had confined himself to the study of his profession: but he has unhappily judged it necessary to decry the opinions and discoveries of the first chemists of the age, and has only proved how little qualified he is for rightly understanding their publications. It would be a mere waste of time to follow him through all his benighted wanderings; and indeed it would not be easy for the most persevering critic to support so uncomfortable a journey:

> "*Quale per incertam Lunam sub luce maligna*
> *Est iter in sylvis: ubi cœlum condidit umbrâ*
> *Jupiter, et rebus nox abstulit atra colorem.*"

The general assent of the most celebrated chemical philosophers, Dr. Priestley alone excepted, to the opinions of Lavoisier, precludes the necessity of our entering into any defence of them here. This assent, however, Dr. Harrington considers as the result of a combination against *his* system; and he has most bitterly denounced those British chemists, who have surrendered their old principles to the enemy. He is, indeed, completely a chemical alarmist, and declaims against the introduction of French principles into the laboratory, with all the warmth of our most zealous political writers.

The Doctor informs us, (p. 29,) that he 'has long been in the habit of using green glasses,' [spectacles, we suppose,] and that 'upon his first using them, every thing appeared very green through them; but by habit, that greenness went off, and he could distinguish colours.' We apprehend that he has long looked through some wrong medium

medium at the facts of chemistry; and we sincerely wish that his perseverance may overcome the internal, as it seems to have gotten the better of the optical, deception.

Fer...r.

Art. 39. *A Meteorological Journal for the Year* 1798, kept in London. By William Bent. To which are added, Remarks on the State of the Air, Vegetation, &c. and Observations on the Diseases in the City and its Vicinity. 8vo. 2s. Bent.

Mr. Bent continues his accurate register of facts, which may be interesting to some inquirers. Whether an accession of similar observations will furnish any new conclusions to philosophy, we shall not venture to decide:—but we recollect that Dr. Johnson somewhere mentions a curious observer, who, after having noted the changes of the weather during forty years, discovered that it was variable. Perhaps Mr. Bent may teach us when and how it may be expected to vary.

D.

POETRY *and* DRAMATIC.

Art. 40. *Poems, Sacred and Moral.* By Thomas Gisborne, M. A. Small 8vo. pp. 118. 4s. Boards. Cadell jun. and Davies.

When a poetic writer exerts his powers to illustrate moral truths, and to recommend the genuine doctrines of religion through so pleasing a medium, we cannot look on his design but with the highest respect, nor contemplate its execution without the utmost candour. The little volume now before us contains, I. a piece entitled *Conscience*; II. *Fortitude;* both short poems; III. *Stanzas to a Church-Bell;* IV. *The Birth-Day Eve*, a Poem; V. *Ode to the Harp of Cowper;* VI. *The Dying Indian*, an Ode; VII. *The Reformation*, an Ode; VIII. Is an application of some passages from the 10th chapter of Isaiah to the present state of Europe, an Ode; IX. *Consolation*, a Lyric Poem; the purport of which is to compare Christianity with the three leading systems of antient philosophy, that of Pyrrho, that of Epicurus, and that of Zeno, as to their influence on human happiness. In the delineation of the doctrines of Epicurus, we fear that Mr. Gisborne is misled by the vulgar opinion concerning that philosopher, when he represents him as a sensualist.—The remaining contents of the volume are, *The Duellist*, an Elegy; and an *Elegy to the Memory of the Rev. William Mason.*

We select for the amusement of our readers the pretty 'Stanzas to a Church Bell':

'Sonorous Brass of changeful power,
Now whirl'd amain, now swinging slow,
Alike prepared to hail the hour
Of hope or fear, of joy or woe!

'When Sabbath tracks to prayer invite,
Or babes acquire a Christian's name,
Or Wedlock's holy ties unite,
Thy notes the festival proclaim.

'And when unbodied spirits fly,
Thy knell reveals the parting breath;
And when the lifted bier draws nigh,
Conducts it to the vault of death.

'When

'When rebecks greet the jocund wake,
Or May-day wreaths perfume the plain;
The labouring spire thy carols shake,
And rouse to mirth the village train.

'When gleamy fires the corn-stack climb,
Or flames the sinking roof invade;
In quick alarm thy backward chime
On distant hamlets calls for aid.

'When Jervis lops the flying host;
When Howe or Duncan shouts "Destroy!"
Thy clanging peals from coast to coast
Explosive bear a people's joy.

'And when to Henry's hallow'd ground *
In sable pomp shall George be borne;
Thy muffled strokes in broken sound
Shall tell how boding nations mourn.

'Emblem of man's uncertain tongue,
That owns each varying passion's sway;
From hope to fear, from plaint to song,
Transferr'd within one little day!

'Sonorous Brass, let grief or joy,
Let sober truth or wild pretence,
Or hope or fear thy tones employ,
Alike in thee 'tis innocence.

'Not so, when man's uncertain voice
Conspires to aid the foul intent,
Pursues unawed its headstrong choice,
By malice urged, on vengeance bent;

'With rage o'erwhelms, with guile betrays,
The living wounds, defames the dead,
Love with envenom'd scorn repays,
With curses loads a brother's head;

'The Power, whose nod is fate, defies,
Disdains his mercy, braves his ire,
Scoffs the bright mansions of the skies,
And Hell's blue lakes of endless fire.

'O when the dead of every age,
For judgement ranged in order due,
In Accusation's open page
Each idle word recorded view †;

'What crowds shall wish their tongues, like thee,
Had but perform'd a mimic's part;
Had moved from conscious meaning free,
Nor told the language of the heart!'

'* Henry the Seventh's Chapel, the burying-place of the kings of Great Britain.

"† I say unto you, that every idle word that men speak, they shall "give account thereof in the day of judgment." Matth. chap. xii. v. 36.'

We

We were inclined to quote, as a more important specimen, the whole of the poem entitled THE REFORMATION, already mentioned: but, on reperusal, we find it too long; which we regret, as its merit well entitles it to the honour of a transcript.—From the Elegy to the Memory of the late Rev. William Mason, we have already given an extract: See Rev. vol. XXIII. N. S. p. 456. Smyth.

Art. 41. *Fabulæ Selectæ, Auctore* Joanne Gay, *Latine redditæ.* Select Fables of John Gay, translated into Latin, by Chr. Anstey, Esq. 8vo. 2s. 6d. Cadell jun. and Davies.

The ingenious author of this version, whose sportive pen, nearly 40 years ago, so happily recorded the humours of Bath, has long since not only been the acknowleged favourite of the Comic Muse, and her principal secretary, but has been allowed to have furnished the model of a species of poetry of a singularly entertaining kind. He has likewise acquired the reputation of a superior knowlege and taste in the Roman tongue; of which he has given indisputable proofs, by his classical Latinity, on various occasions.

In his preface, Mr. Anstey informs us that these fables were translated many years ago (1777) for the use of his children, and anonymously addressed to the Prince of Wales; and that he now bequeaths them, in a more correct state, as a legacy to his grandchildren. He adds: if by this attempt he should be thought worthy of a place on the 4th form at Eton, which he has quitted nearly sixty years, he shall not, at the age of seventy, envy those who are placed on the *seventh form* by the facetious author of *The Pursuits of Literature* *. The original English accompanies the Latin version.

The Fables of Phædrus are written in iambics; those of Mr. Anstey appear in hexameter and pentameter verse. We are not certain that we do not prefer the former structure, which, in the hands of the Roman fabulist, is eminently simple and elegant. Every learned reader will, however, admire the present work for its accuracy, and for its *Ansteyan* terseness.

We shall insert the following Fable, which is the 4th in the collection, as a specimen:

'PUELLA ET VESPA.

'*Quot patitur vanos Virgo formosa susurros!*
Stultitiæ quoties ludit in aure sonus!
Quicquid agit, quoquò veneres radiantia pandunt
Lumina, inepta subest sollicitatque cohors:
Sin teneræ nullâ capiant dulcedine nugæ,
Hæc vetet asperior frons, tacitusque pudor:
Stultus terga daret justâ grævitate repulsus;
Vel minimo carpit verbere musca fugam;
Quis tamen innumeram cogat discedere gentem?
Altera succedet, quem fugit una, loco:

---

* Alluding to the form to which the learned translators of Gray's Elegy into Greek verse are elevated, in the Pursuits of Literature; which Mr. Anstey calls: *Opus sanè non mediocris ingenii: Eruditionis admodùm reconditæ; et abundè salis.*

Qui

Qui stultum novit, fratrem quoque noscat oportet;
Quis comitem, quem non laudet, ineptus habet?
Et primo quæcunque aurem dedit ardelioni,
Hanc pœnam meritâ peste puella luit.

'*Officio,* DORIS, *studioque operata diurno,*
Ad speculum, formæ dum studiosa, sedet,
Nunc hilari sibi fronte placens, nunc ore severo,
Æstivos fallit desidiosa dies.

'*Hic ubi lenta sedet, gyro secat aera circum*
Lascivam carpens Vespa proterva viam;
Nunc reprimit, nunc urget iter, nunc oscula figit
Cervici, aut roseas appetit ore genas;
Verbera non icti defendunt ora flabelli,
Illa novo rediens corda timore movet;
Pulsa etenim fit mente audacior, inque labello
Insidet, et rorem luxuriosa bibit;

'*Nympha fremit, frontemque trahens, O! Numina, clamat,*
Muscarum crucians hoc prohibete genus;
Quotquot habent pestes, non importunius ullum
Turpibus his vespis Dii tribuere malum.

'*Tene mei capiunt fastidia, voce querenti*
Vespa ait, et fidus sic tibi sordet amor?
Hæccine culpa movet? (quæ si tibi culpa videtur)
Non mihi, sed formæ est attribuenda tuæ.
Hoc tibi purpureum, quod spirat thura, labellum,
Quæque sedet roseis læta juventa genis,
Impulit, ut pomo, quo non speciosius unquam
Persica terra tulit, sit mihi posse frui.

'*Ah! ne cæde,* JANETTA, *haud muscæ ignobilis instar,*
Unquam Vespa neci sit data, DORIS *ait,*
Nam quamvis animal sit paulò audacius, hercle
Urbanos mores, ingenuosque sapit.

'*Exultans animis illa agmina conscia jungit,*
Nymphaque quàm facilis, quàm sit amica docet;
Se gustasse Theam cum Virgine jactat odoram,
Suaviaque in labris signa notare jubet.

'*His monita indiciis, et sorti fisa secundæ*
Hùc omnis subitò turba proterva volat;
Participat mensæ luxum importuna diurnæ,
Et circum aerio ludit ubique sono;
Nunc agitata fremit, nunc paulùm immota quieseit,
Nunc iterum ascendit, pervolitatque sinum;
Nec cedit; Vespis dum sentit inesse venenum,
Ictaque crudeli cuspide nympha dolet.' Dr. B....y.

Art. 42. *The Secret*, a Comedy, in Five Acts, as performed at the Theatre Royal, Drury-Lane. By E. Morris, Esq; Barrister at Law. 8vo. 2s. Cadell jun. and Davis.

This play has had the good fortune to *run* (as the phrase is) a considerable time, but does not appear to us to be constructed on a very

very clear and interesting fable; nor to abound in wit, humour, or original characters. There is, however, merit in the dialogue, and the principles are good; yet perhaps the part of Dorville is somewhat overcharged with a goodness and benevolence of which the prototype would not be easily found in nature; and which, if practised to the same extent, would bring a man to ruin, unless some miraculous events were to extricate him from his difficulties.

The character of Jack Lizard, at first, promised a new species of humour in the silent nod and pantomimical replies of Banister: but, when he is made to talk, though his father prepared us for a wit by telling us that "he says more good things than any man," all originality disappears; and little opportunity is afforded to the excellent representative of the character, for the display of his humorous powers.

Mrs. Jordan, as usual, made the most of her part; sang delightfully a ballad, which had little merit in the words, or in the music, except what her exquisite voice gave it; and, in speaking the Epilogue, which has merit in itself, she manifested so much pleasantry, play of countenance, and variety of gesture, that she put many into such good humour on the first night, that they were stimulated to extend their applause to the proposal of the play for a second representation, though they scarcely moved a hand during the performance.

D.r B....y.

MILITARY AFFAIRS.

Art. 43. *Military Instructions:* including each particular Motion of the Manual and Platoon Exercises; elucidated with very minute Drawings by Mr. R. K. Porter. By David Roberts, Lieut. and Acting Adjutant of the 1st Regt. of Life Guards. 4to. 36 Pages; 24 Plates. 10s. 6d. Boards. Egerton.

This work is confined to the *drill:* but, since the celebrated *Discipline for the Norfolk Militia*, by Lord Townshend and the late Mr. Windham, we have not seen a publication in which every motion of the manual and platoon exercises is so distinctly and minutely described. Each motion is illustrated by a figure.

The plates are very accurately executed, but we observe the following errors in the references: Fig. 1. Plate 8. is misquoted for Fig. 3. (page 11, line 5,) and Fig. 4. Plate 10. for Fig. 3. page 14.

In page 13, the author proceeds to *Unfix Bayonets* from *Support Arms*, without apprizing the reader that the soldier must previously be made to *Order Arms*.

Mr. Roberts concludes with a proper caution to young officers, not to punish and confine their men wantonly, but to follow the golden adage, and "let precept be supported by example."

Suth....d.

Art. 44. *Secret Instructions*, by Frederick the Second, *King of Prussia:* Being Secret Orders given by that Monarch to the Officers of his Army, and particularly to those of the Cavalry, for the Regulation of their Conduct in War. Translated from the Original German, into French, by *the Prince De Ligne*, and now First translated into English. By [as appears from the Dedication] Edward Eyre, late Captain in the 40th Regiment,

and

and Lieut. Col. in the Army. 12mo. pp. 195. 4s. 6d. sewed. E. and T. Williams. 1798.

When Lieut. Col. Eyre, in August 1798, asserted this work to be 'now first translated into English,' he certainly was not aware that a spirited translation of the very same tract was published in March 1797, by Lieut. Foster, of the 1st or Royal Dragoons. (See Rev. Vol. xxiii. N. S. p. 327.) The Colonel will therefore forgive our assuring him that the present is in no respect the *first* translation.

Art. 45. *Instructions for forming a Regiment of Infantry for Parade of Exercise*, together with the Eighteen Manœuvres, as ordered to be practised by His Majesty's Infantry Forces, accompanied by Explanations and Diagrams. Oblong 8vo. pp. 139. 5s. Boards. Egerton. 1798.

This book contains precisely that part of Captain Reide's excellent *Treatise on the Duty of Infantry Officers, and the present System of British Military Discipline*, (see our last Rev. p. 335,) which relates to forming a battalion and to the eighteen manœuvres: but it has the advantage of being illustrated by plates.

The compiler, we find by the dedication, is Captain H. Dickinson of the East India Volunteers: who, 'not being a professional Military Man,' is entitled to credit for the attention which he has paid to the service.

POLITICS, &c.

Art. 46. *A brief Examination into the Increase of the Revenue, Commerce, and Manufactures of Great Britain*, from 1792 to 1799. By George Rose, Esq. 8vo. 2s. Wright, &c.

The measures to which Mr. Rose here principally attributes the support of the finances are, 1st, The appropriation, in 1786, of the annual million towards the extinction of the national debt: 2dly, The firmness of administration in not applying the produce of the sinking fund to the relief of the necessities of the state: 3dly, The act passed in 1792, which provided that, on all future loans, (in addition to the tax for paying the interest,) a surplus of one *per cent.* should be raised, towards the redemption of the capital created. 4thly, and finally, the last adopted measure of the income tax.

With respect to a sinking fund, it is easily capable of demonstration, that its effect in diminishing a debt must depend on the fund consisting, or not consisting, of a fair surplus of revenue above the whole necessary annual expenditure: yet a sinking fund must nevertheless operate considerably in maintaining the credit of the stocks. We do not understand why, as in the following paragraph, Mr. R. thinks it necessary to speak of our being enabled to *repeal* taxes by means of the sinking fund, when the new debt accumulates much more rapidly than the old debt is diminished:

'As the dividends due on such parts of the old debt as shall be paid off after the sinking fund shall have attained its maximum, and the annuities which shall afterwards fall in, will be at the disposal of Parliament; the period of repealing taxes annually to that amount (probably 200,000l. and in the first year much more) cannot be delayed more than 9, 10, or 11 years.'

It appears that, in the last six years, while the annual produce of the sinking fund has increased 1,740,710l., the additional charge which the nation has incurred by the war is 7,931,215l.

Mr. R. is very sanguine in his expectations from the income tax. He says,

'The efforts lately made by the country are not the transient and temporary exertion of its means to answer an occasional emergency; by adhering to the same wise and provident measures which have lately been adopted, the same annual expenditure can be afforded, without any permanent addition to the national debt; as the amount of the debt which will be incurred, in this and every subsequent year of the war, will be so reduced by the application of the money coming in from the tax on income (after ten millions shall have been raised for the service of each current year), as that the permanent debt, which will be left as an addition to the antecedent one, will not exceed the annual amount of the whole produce of the sinking fund.'

The permanent taxes Mr. Rose has taken at 21 millions. For land and malt, with the expected produce of new taxes, lottery, *Indian participation*, &c. he adds nearly 4½ millions, making a total of 25,425,000l. Admitting that this statement is not over-rated, and adding to it as much as the most favorable calculations have estimated for the produce of the income tax, the whole must yet fall considerably short of the annual expenditure. If, however, the country shall be able to sustain a continuance of the burthens now established, the financial prospect will have been rendered more favorable than for some years past there has been reason to expect; and if improved by economical management, (and where such great sacrifices are made, there is no plea for a neglect of economy,) the benefit may probably be permanent.

The objections stated by Mr. R. to a tax on capital are, that the assistance of a lawyer and a mathematician would be necessary in almost every case of real, and in many cases of personal, property; and that the whole of the interests in reversionary estates must escape. Perhaps, there will not be found less work for lawyers and mathematicians in the present income tax, than there would have been in a tax on capital; and as to reversionary interests, if property be taxed in the hands of the present possessor, it does not seem a reasonable cause of complaint that the expectant should not be taxed till he comes into possession. If the substance pays, government may reasonably be satisfied, though the shadow escapes. Capt. B...y

Art. 47. *Report of the Committee of Secrecy of the House of Commons*; whom the several Papers, referred to in his Majesty's Message of the 22d of January 1799, and which were presented (sealed up) to the House by Mr. Secretary Dundas, upon the 23d of the said Month by his Majesty's Command, were referred; and who were directed to examine the Matters thereof, and report the same, as they shall appear to them, to the House. Ordered to be printed 15th March 1799. 8vo. 2s. Wright.

This Report contains a collection of accounts of the proceedings of the different popular meetings in Great Britain and Ireland, since the year 1791; of the proceedings of government to suppress those meetings;

meetings; and against individuals, on charges of treasonable practices and sedition; also an account of the progress of the Society of United Irishmen in Ireland, till the period of the rebellion, &c. &c. With an Appendix containing papers, and documents, relative to the subjects of the Report. At the conclusion of the Report, the inferences drawn by the Committee, on a review of all the circumstances which came under their cognizance, are stated.

Capt. B....y. G. 2.

We cannot enter into a detail of the various contents of this pamphlet, but we recommend it to the attentive perusal and serious consideration of the public.

MISCELLANEOUS.

Art. 48. *Reply of L. N. M. Carnot, Citizen of France, one of the Founders of the Republic, and Constitutional Member of the Executive Directory;* to the Report made on the Conspiracy of the 18th Fructidor, 5th Year, by J. Ch. Bailleul, in the Name of the Select Committee. 8vo. 3s. 6d. Wright. 1799.

From the pen of a man who has filled an eminent station with the reputation of superior abilities, and whose fall from that elevation was attended with circumstances so extraordinary and of such importance as to command the general attention of Europe, great information, and perhaps some entertainment, would naturally be expected. The pamphlet now presented to the public, under the title of L. N. M. Carnot's Reply to the accusations against him contained in the report made by J. Ch. Bailleul, appears so little capable of creating interest, and affords so little entertainment in the perusal, that, before implicit credit can be given to what it advances as information, more evidence, than merely what a title-page furnishes, seems requisite to prove that Carnot is its real author. The English editor himself says;

'It is not easy to discover the motive which could have led to the publication of the following work; a work which, when we consider the situation of the author, whether with a view to the ambitious prospects which he may be supposed still to entertain, or to that regard for character which is never wholly abandoned by the most profligate of mankind, must appear equally prejudicial to his interests and to his reputation.'

Again he says: 'With respect to the authenticity of the work, we have no means of forming a judgment but what are equally open to our readers, namely, an attentive examination of the evidence contained in the work itself.' On this ground, the editor feels convinced of its authenticity, and on this ground some may be inclined to doubt it:—but we do not pretend to form a decisive opinion.

A petulance of expression and an indecent levity run through the whole. Scurrility is plentifully bestowed, but such as bears more the appearance of affectation of anger, than of genuine indignation. The lie is several times given, and other expressions occur which are at least equally coarse. 'The acrimonious viper coiled himself again on his chair.'—'Such are the filthy excrements of falsehood,' &c. When serious reflection is attempted, it never rises above the most common-place sentiment.

The ensuing conversation is described as having passed in the Directory:

'At the discussion which was held, to determine on what footing that country (*i. e.* Holland) should be placed in the treaty then negotiating at Lisle with Lord Malmesbury, Reubel made a violent harangue against the Batavian nation. He said, they were all Stadtholderians, and had constantly betrayed us. They were a nation of merchants, whose interests were centered in England, whose wishes were in favour of the English, who were only watching for an opportunity to surrender themselves to the English, into whose hands Admiral T. Lucas had recently delivered his fleet at the Cape of Good Hope. Every thing that Holland had to gain in prosperity and in riches, it was evident, could only be at the expence of France, and to the advantage of England. In short, there was but one line of conduct to pursue with regard to Holland—'TO KEEP HER IN THE MOST ABSOLUTE DEPENDENCE—TO SUBJECT HER TO A PASSIVE OBEDIENCE—AND TO TREAT HER AS A CONQUERED COUNTRY!!!'

"If this be so," said I, "we are very unwise to continue the war merely for the restoration of their colonies; or, when our own are offered us, to exhaust the remains of our marine in vain efforts to serve so ungrateful a nation. I am of opinion that Holland should be asked, what sacrifices she is willing to make to obtain peace?"

"But do you imagine," replied Reubel, "that it is for Holland that I would demand the restitution of the Cape and Trincomalé? The first object is that of recovering the possession of them, for which purpose, the Dutch must furnish the ships and the money, and afterwards I will clearly convince them that these colonies belong to us!!!"

The following (not very circumstantial) account is given of the escape of Carnot from the fury of his colleagues:

'A body of assassins had been posted at a back gate of my garden, whom the guard of the Directory, by my orders, commanded to retire, and they obeyed when they found that they were discovered. A few minutes previous to the departure of the detachment, who were appointed to arrest me, an aid de camp was dispatched to know if I was still at my house; where I certainly was, and quitted it but at the moment when the guard entered the apartments. The Luxembourg was, as it were, invested by a large body of troops, supported by artillery; but I deceived the vigilance of the assassins, by availing myself of a secret passage of which they were ignorant. I heard the discharge of the alarm gun, just as I had shut the last door through which I was to pass; and, with a pistol in each hand, I wandered for three hours about the city, and took my way through bye streets, in order to avoid the detachments of soldiers which had been augmented on that occasion, and that I might, at length, reach the asylum where I fled for safety. Reubel could not express the violence of his anger at the officer who carried the order of arrest; and Barras was so inconceivably base, as to accompany the soldiers who were ordered to seize the feeble Barthelemy.

'On the 19th, when the council excepted from the proscription certain representatives, and among others Doulcet, the Directory addressed

addressed a very insolent message to the Council on that occasion, who, recovered from its first impressions of terror, refused to change its determination. This message is well known. It was then the opinion of Réveillère, that Doulcet should be assassinated. To say the truth, give that man but an opportunity to do any thing, and he will soon find the means of doing it.'

Whether the Directory be capable of the intentions here ascribed to them, is not the question: but it is remarkable that, from the foregoing extract, M. Carnot appears, after his expulsion and escape, to have continued still to be acquainted with what passed in the Directory.

Capt. B...y.

Art. 49. *A Translation of Passages from Greek, Latin, Italian, and French Writers*, quoted in the Prefaces and Notes to "The Pursuits of Literature; a Poem in Four Dialogues." To which is prefixed, a *Prefatory Epistle*, intended as a general Vindication of *the Pursuits of Literature*, from various Remarks which have been made upon that Work. By the Translator. 8vo. 3s. 6d. Boards. Becket. 1798.

The writer, editor, or author of this miscellaneous volume offers it to the public, not as the production of that inscrutable pen to which they are so much obliged for "*The Pursuits of Literature*," but as coming from the volunteer hand of a friend.—A man of genius will always find or can easily make friends, at pleasure.

It matters little, however, who is the proper *author* of such a book as that which now claims our attention. Suffice it that a work of the kind was wanted, and that here it is.—Its purpose is to illustrate a poet whom all men read, whom many approve, and whom still more admire. In the number of readers, of which these classes are composed, it may be very reasonably concluded that there are not a few to whom a *translation* of the numerous citations from works, which are familiarly known to those only who are conversant with the classical and foreign languages, must undoubtedly be very acceptable; and for *their* use the work is professedly published.—Let the editor, or translator, or whatever title best pleaseth his ear, explain, in his own words, his inducement to this undertaking: we quote from his 'Prefatory Epistle;' addressed to L. B——, Esq.

'I have been informed that repeated requests have been made to the publisher of "the Pursuits of Literature," for a translation of the passages from various languages quoted in the notes to that poem. I wish the author had translated them himself; but as that cannot be the case, I have, at your immediate desire, endeavoured to give you some idea of their force and full meaning. As you are of opinion that my attempt will not be disagreeable or unsatisfactory to many persons who are not peculiarly conversant in Greek and Latin, I have consented to print and publish them.'

As to this 'Prefatory Epistle,' its main design is to give (as the title-page expresses) a general defence of the *Pursuits*, &c. against the various attacks which have been made on that celebrated poem, by hostile critics and rival poets; and this purpose the author of the

epistle has accomplished with all the *warmth*, not to say the *partiality*, of the most *intimate* friendship.

Among the opponents of the poem here defended, the attention of the *Epistolary* Critic is chiefly employed on a performance entitled "The *Progress of Satire, an Essay in Verse**;" a work of more desert than is here allowed to it; for it is treated as possessing very little merit indeed! In opposition, however, to the present writer's opinion, some of his readers, perhaps, may quote his own *conduct*; since he has vouchsafed to devote many—many pages to a laboured and severe castigation of this *despised* adversary!—These numerous pages, however, are enlivened by a variety of miscellaneous strictures and excursive remarks; similar, in manner, (we avoid particulars,) to the general tenor of the *Prefaces* to the several editions of the PURSUITS, &c. with the perusal of which we have been successively amused;—as we likewise have been, in no small degree, with the contents of the present supplemental volume.

Art. 50. *Supplement to the Progress of Satire*, containing Remarks on the *Pursuer* of Literature's Defence. 8vo. 1s. Bell. 1799.

The *Prefatory Epistle* mentioned in the preceding Article has given birth to this *Reply*, from the author of the *Progress of Satire*; who, as it appears, not feeling himself totally vanquished by the '*Pursuer*,' as he terms his opponent, [in return perhaps for that gentleman's having called *him* the *Progressionist*,] here renews the combat.—Among the literary kicks and cuffs which he aims at his powerful adversary, there seem to be some "*good hits*;" particularly when he remarks on what the *Pursuer* has suggested respecting the danger which the celebrated satirist apprehends from the countenance given by us to the French emigrant clergy. He likewise warmly reprobates the censure which the Pursuer has so harshly cast on Dr. Warton, on account of his edition of Pope's work. Many, indeed, are of opinion that the venerable editor has not been altogether candidly treated on this occasion; nor, in every respect, according to the true principles of criticism respecting the duty of an editor.

FAST SERMONS, Feb. 27, 1799.

Art. 51. *Preached before the Lords Spiritual and Temporal, Feb.* 27, 1799. By Shute, Lord Bishop of Durham. 4to. 1s. Payne.

The text of this sermon is from Luke xiii. 1—5. and it is treated as it ought to be by a Christian preacher. The style is plain and unaffected, and not a spark of national or personal invective is to be found in it. We give the following extracts as a specimen:

'It was our Saviour's manner to give a practical turn to every thing. Questions and occasions, which, by their own nature, and probably according to the design of those who introduced them, might have led to abstruse and mysterious speculations, drew from him unexpected lessons of duty, admonitions immediately applicable to conduct. Instructions thus conveyed, must have come upon

* See Rev. vol. xxv. N. S. p. 472.

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the inquirer, and to the audience with a force, which we who read them now, feel and conceive very imperfectly, because we have not present to our senses and observation, those circumstances and realities, which gave aptness and impression to the answer, power and efficacy to the reflection.'

After having rehearsed the answer given by Jesus to those Jews who *told him of the Galilæans, whose blood Pilate had mingled with their sacrifices;* the Bishop adds:

'The doctrine which I consider our Lord as laying down by these examples is, that Almighty God in the dispensation of corrective evil, which he is pleased to carry on in this world, as it is connected with that dispensation which awaits us in another, out of many alike "concluded under sin," alike obnoxious to his judgements, out of many who share in a common depravity, instead of destroying all, punishes some in order to afford a warning to others; that, if those others do not take warning by the example, they shall assuredly fall by the same hand; incur, not perhaps in the same manner, but the same destruction, as they have seen inflicted; that the thus taking warning to themselves is the proper, the intended use and application of every signal calamity which comes to pass before their eyes; and, lastly, that in a religious view, this is the only use which we are authorised to make of them.

'These considerations, which ought never perhaps to be long absent from our thoughts, are at this time brought before our view by the situation in which we are placed. Can it be necessary to remind any one person who hears me, that tremendous warnings have been given, and continue to be given to a careless age. A devouring fire is kindled upon the earth. All endeavours, I will not say to check, but to subdue it's fury, have hitherto failed. In what direction it's flames may next be carried, human foresight is not able to predict. They who are spared have cause to tremble. That sacred voice ought to be still sounding in their ears, "except ye repent, ye shall all likewise perish." With deep thankfulness indeed for the mercy by which we have hitherto been protected, and for the opportunity and space for reflection and amendment which have already been vouchsafed to them, still they ought to see their danger as it is: they ought to see, that, acting as reasonable men, they can neither dismiss their fears, remit their penitence, nor forget their vows.'

Again, deploring the religious insensibility of the age, his Lordship makes this excellent remark:

'But from whatever cause or quarter this deep insensibility to the truths of religion hath proceeded, I fear I am too well warranted in asserting that it still exists. A series of visitations the most awful, of public calamities the most general, of political changes the most tremendous, which any age of the world ever experienced within the same period, have not done away our negligence in these most important of all human concerns. The successive fall of states and kingdoms, the ruin of establishments and institutions by which the order of civil life hath hitherto been maintained, the devastation of countries,

countries, the misery of millions, though events passing at our doors, under our eyes, amongst those with whom we are connected by society or alliance, have produced very little, if any, change upon our religious dispositions. The truth is, that whatever we may pretend, we are not affected at the heart by these things.'

From these specimens, we presume, our readers will be not only enabled to judge of the merit of the Bishop's sermon, but will be induced to peruse it with serious attention.

Ged. s.

Art. 52. *A Fast Sermon for February the 27th*, 1799, from Isaiah, Chapter x. Verse 5. 4to. 1s. Stockdale.

When, where, or by whom, this discourse was preached, does not appear: but with energy of diction and strength of argument, it urges on men an alteration and amendment of life.—Having taken notice of the wickedness of the world, and of the Jewish state in particular, at the time when the Messiah appeared, it is asked, 'what remedy did the Saviour bring with him for these evils?'—the laconic, but impressive, answer is;—'He brought repentance.'—This, nevertheless, it is added in the progress of the sermon, is the only remedy which we are unwilling to try; and rather than cast a thought on it, we are for recurring to every other feasible experiment. The first thing which we do, in order to liberate ourselves from the slavery of sin, is to use the powers of nature, art, and industry; the second, to endeavour to call down, by prayer and supplication, the aid of supernatural agency:—but this is not of the least avail without repentance. We can never hope to prosper by either of these modes; for our sins prevent our prayers from succeeding. 'It was not (we are told) the sword of God alone, nor the sword of Gideon, that conquered the Midianites, but the sword of God *and* Gideon. The force of God and man united makes human efforts succeed:—but when this union is broken by our sins, all our endeavours are rendered doubly useless, by depriving us of the aid of God, and of the strength of our own arm.'

These few lines may afford some idea of the nature and importance of this anonymous discourse.

Hi.

CORRESPONDENCE.

In acknowleging the letter from the author of the pamphlet on *Chess*, (noticed in our last Number,) we must take the liberty of delivering it as our opinion, that too obstinate an adherence to any system is the broad path to certain delusion; and that, if pursued, it will, in the strong language of the East, bring a man at last to believe that the freshest sandal-wood is a flame of fire.—We cannot follow the author through the whole of his letter, but must offer a remark on the beginning and the end of it.

The game of chess was a military one, and is still so with us, except that the piece on our boards, called the Queen, has not much of that aspect: but, properly, that piece is Pherz, or General, and from Pherz, Vizir, became Vierge, Lady, or Queen. If this be so, how

how is the difference of the English and the Chinese games equal to the difference between their governments; or, in other words, between freedom and despotism? The author will find the characteristic of chess in a poem attributed to Lucan, and addressed to Calphurnius Piso: "*Mille modis acies tua dimicat.*"

There is no game but chess, in which the blocking up of the King puts an end to it. Neither Greeks nor Romans played at chess, as Mr. Barrington has shewn. The name of the game in Ovid, of which he wanted to be informed, is Spiccoli, and is still played by the Italians, and has been lately introduced into this country.—Our correspondent says, 'but the King, I think, may without much straining be supposed never to quit the board; I consider him, when the grand stroke is received, in a similar situation with the chief magistrate of England, when the check-mate of an adverse majority forces him to have a fresh administration.' This quotation shews that civil government is no more like chess than the πεττεία of the Greeks, the *Latrunculi* of the Latins, the Spiccoli of the Italians, or the Drafts of the French; for what Jacobus was there, at any time, who could not save himself by taking a boat at Whitehall; or what Walpole, who could not escape through the gallery of the House of Commons? ! !

We must decline any farther attention to this subject. Opinions will differ; and arguments may be extended to a great length, without producing conviction. West.n.

In farther reply to our correspondent D., (see page 120,) we have to mention that the first volume of Forster's Travels appeared in Calcutta in 1789, during the life of the author, who was then understood to be employed in preparing the second for the press. When the war commenced with Tippu Sultan, Mr. Forster was appointed ambassador to the Mahratta court of Nagpûr, and died soon after his arrival in that city. We have no reason for doubting that the second volume is compiled from the papers found in his possession, after his decease. Ham....n.

We are concerned to learn, by a second letter from General Vallancey, that, in offering our observations on his performance, (see page 116,) we were guilty of a breach of politeness, because his work was only intended for distribution among his friends, and not for the public eye. We hope that the General will excuse the following short explanation of our conduct in this affair.—Capt. Wilford has (we think) incautiously permitted the publication of his opinion, that the islands of Great Britain and Ireland constitute the Tricatachol of the Hindu Puranas. *Primâ facie*, the fact is an improbable one; yet we well know that Capt. Wilford's conclusions are not usually founded on slender premises: and whenever his proofs are submitted to the public, we are satisfied that they will merit attention. It was obvious, however, that General Vallancey and Mr. Maurice had mistaken the assertion for the proof, by publishing Capt. W.'s observations under the title of "Extracts from the Puranas." Our

duty to the public obliged us to develope this important misconception, and justice to those Gentlemen seemed to require that we should transfer the blame to their correspondent in India, (Mr. Ousely,) with whom it originated. In all this, we flatter ourselves, the candor of General Vallancey will see matter for commendation rather than for censure.

Ham...

We shall willingly publish the letter respecting General Washington, sent to us by a correspondent, F. B—y: but we must first request this gentleman to authenticate his communication by farther identifying himself, giving his place of residence, &c. If he does not choose that such particulars should appear in print, they must however be confided to us.

Mr. Bridel informs us that, in the account which we gave (in our last Review) of his *Introduction to Grammar*, we were, 'by a mistake of the printer, led to throw a doubt on his being the author;' which he begs us 'to rectify.'

'A Hertfordshire Farmer' is referred to our xvith vol. New Series, p. 454.

Can 'A constant Reader,' whose letter bears the Bawtry post mark, conscientiously say that he has a right to give us the trouble of answering questions, and to make us pay heavy postage for his letter which contains them? We are always disposed to oblige our correspondents: but really, in these days of *taxation*, such taxes as these on our time and our pockets ought to be resisted. We will, however, answer this gentleman's question,—in the negative.

The above observations apply, in part, to another 'Constant Reader,' who inquires about a system of Geography; and whom we must refer to some intelligent friend.

J. A—n's second letter is received, but we have at present mislaid his first.

Rusticus, Dr. Booker, and some others, we are obliged to postpone, by the want of time and room.

☞ With the Review for May, will be published the APPENDIX to the xxviiith volume of the New Series: containing copious accounts of important FOREIGN PUBLICATIONS, and the *General Title*, *Table of Contents*, and *Index*, for the Volume.

*** In the Number for March, p. 272. l. 17. dele the word '*line*' after '*metre*;'—and in p. 356. l. 25. dele '*of*' after '*comprehending*.'

APPENDIX

TO THE

TWENTY-EIGHTH VOLUME

OF THE

MONTHLY REVIEW

ENLARGED.

FOREIGN LITERATURE.

Art. I. *Theorie des Fonctions Analytiques*; &c. *i. e.* The Theory of Analytical Functions; containing the Principles of the Differential Calculus, divested of all Reference to infinitely small or evanescent Quantities, Limits, or Fluxions, and reduced to the Algebraical Analysis of finite Quantities. By J. L. La Grange, of the National Institute. 4to. pp. 270. Paris. 1798.

The highest commendation of intellectual excellence is that which is bestowed on genius, the talent of invention. It is this talent which, if it constitutes the poet, also ennobles the mathematician, and elevates him from the unfruitful contemplation of lines and angles, to extend or to perfect the methods of analysis, and to devise new or to combine old theories. In proportion to the difficulty or importance of any discovery, is its merit; and to ascertain the quantity of such merit, in many cases, is matter of curious and instructive speculation; as it will be necessary for us to trace the discovery from its first nascent idea, through all its variety of form and augmentation, to its full and perfect maturity; to observe how much this or that individual contributed to its advancement; and to ascertain the value of the last portion of labour and ability by which its completion was accomplished. We speak of united efforts: for rarely do we find that any invention is comprised within the limits of the intellectual progress of an individual. It seems not to come within the compass of the same man's power both to invent and to perfect,—to lay the deep and solid foundation-stone, and to rear the edifice till

"its turrets sparkle in the skies." In general, the steps of a discovery are to be traced in the histories of the mental travels of many;—taking a long retrospect, we shall observe it in its small beginning and obscure origin; after that, more and more sensible, from the continual accumulation given to it by genius and meditation.

We will take an instance to illustrate and confirm this idea.—Originality of invention has been unanimously attributed to Newton; and the zealous admiration of his contemporaries is confirmed by the sober and corrected judgment of posterity. Exhibiting a vast and comprehensive mind, patience and assiduity in meditation, and appearing not (it would seem) in the fulness of time, but prematurely, his works caused the epoch of a revolution in science. Yet, if we examine the writings of those who preceded him, it will be evident that the honour of his inventions is not his entirely, and exclusively of all other claim; that his way had been prepared and made easy; that he did not live in an age of ignorance, nor of neglected science; and that, if (as we grant) he was the mighty and towering * oak of the forest, the trees surrounding him were of no mean bulk and height. Sometimes, we shall be inclined to think that fortune befriended him, if we may use such a mode of expression and principle of explanation; and that, like Pompey in the war of Mithridates, he stepped in to strike the last blow, and to enjoy the triumph of a victory already ensured by the labours of another. Let us examine the circumstances under which two of Newton's inventions were accomplished; the doctrine of Central forces in Curves, and the Fluxionary Calculus. Previously to Newton, Huygens had invented the theories of Central forces in Circles, and of the Evolute of Curves. The theory of the Central forces in Curves is merely the combination of these two theories; the chief merit seems to belong to Huygens, who had overcome the greatest difficulties; he had only one step more to advance; and we should even deem this last step easy, did we not know that it required a Newton to take it. The fluxionary calculus, the second invention, is intimately connected with the present subject of our inquiry. Of this discovery, the seeds had not only been sown, but had sprung up and almost ripened to maturity. Newton did little more than give simplicity and generality to the methods in use; for instance, to that of Slusius for drawing tangents, and to that of Wallis for finding

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* "*Enfin on voit Neuton s'élever comme un chêne au milieu de ces grands hommes, dominer tout par la force de sa tête, tout embrasser par l'etendue de son genie,*" &c. &c. M. Bailly.

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the areas of curves, by reducing, by means of infinite series, the irrational ordinate into such as were rational. We shall find methods on which that of the fluxionary calculus depended, or with which it has a very near affinity, in the works of Des-Cartes, who taught the application of algebra to geometry; in those of Fermat, who solved the problems of maxima and minima, and drew tangents to curves; in those of Cavalerius, who by his method of indivisibles solved a great variety of problems; in those of Pascal, Gregory, Toricelli, Wren, Hudde, and Slusius; and, finally, in the works of Barrow, who, by the use of his arithmetical triangle in the determination of the tangents of curves, had made such near approaches to the fluxional or differential calculus, that Newton and Leibnitz mutually reproached each other with having imposed on the world, as an original invention, the method of Barrow for tangents generalised, and disguised under a new notation *.

In saying this, we depreciate not the character of our great philosopher; Newton, like other men, must pass through futurity under the protection of his genius alone; and such is the quality of his fame, that it will bear the severest test, and be improved and exalted by it, when cleared from the dross of vague admiration and fulsome panegyric. After the most liberal allowance of praise to those authors to whom Newton is indebted for the success of his discoveries, there will still remain abundant matter to admire in the extent and fertility of his mind; and viewing what he did solely and unaided, we shall be compelled to exclaim "*homo homini quid præstet!*" There are those indeed, who, elevating him above humanity, confer on him a baseless and unsubstantial praise; who, referring to inspiration as the cause of that knowlege which resulted from patient investigation, betray their ignorance, and (which less admits of pardon) read to industry a pernicious and discouraging lesson. In fact, the example of Newton contains much wholesome truth. We learn thence that it is given to no man to derive all from native power, and to owe nothing to another; that by perseverance the greatest excellencies are to be obtained; that, if we would invent, we must first be conversant with the inventions of others; and that the most brilliant works of genius are produced from minds abundantly stored with rich materials. Is it not useful and animating information, that Newton was wise under those circumstances and by those means which have made other men wise; and that, as Homer was acquainted with all the learning of his

* See *Commercium Epistolicum*, and Leibnitz's letter April 9th 1716, in Raphson's History of Fluxions.

time, and as Michael Angelo and Raffaele possessed all the knowlege of the art that could be found in the works of their predecessors, so HE was master of all the stores of science collected by former geometricians? If the fluxionary or differential calculus were only the method of tangents improved and extended, even the merit of this generalization was denied to belong exclusively to Newton; for a claim to it was advanced and urged by a man of great attainments and most extraordinary powers. Previously to the publication of Newton's method of fluxions, Leibnitz had inserted in the acts of Leipsic his differential calculus. Hence arose the celebrated controversy between the friends of these two great men; which was conducted with a zeal more ardent than enlightened; not temperately and impartially, but contentiously and with acrimony. It soon assumed the form and imbibed the spirit of a national dispute. The question was hotly contested, not soberly discussed; victory, not truth, was the object of the controvertists: party opposed party; Leibnitz was seconded by the great Bernouilli: Newton was at the head of less powerful auxiliaries. After an interval of an hundred years, however, the question comes down to us divested of the false glosses which passion and prejudice gave to it; and after it has been carefully examined, we shall have but little reason to approve the final determination of the committee *, which was appointed to adjudge the affair. The documents on which judgment was given are contained in a publication called *Commercium Epistolicum;* a numerous collection of papers, memoirs, &c. which furnish matter for a decision more equitable than was really given. From these papers, as well as from other documents, the truth seems to be that Newton and Leibnitz arrived at the same discovery, each proceeding by his own proper route of ideas; a fact not at all remarkable, when we consider the inventive powers of the two men, and the near affinity of the methods then in use to the differential calculus.

Of the very various objections adduced against Leibnitz, some indeed, it must be confessed, are true, some are false, and some return on the accusers themselves. Against the evidence and exactness of his principles, the objection is to be admitted as valid: for, if, in his method, some quantities are neglected as less than others, then the results obtained by it

* This committee was either very perspicacious or very bold; for it asserted that, in the letter of 10th December 1672 from Newton to Collins, "the method of fluxions was sufficiently described to any intelligent person."

ought not to be exact; except it could be shewn that, during the process of the operations, a compensation of errors had taken place. Yet the apology offered for him by a learned mathematician (Bossut) is not undeserving of notice: "Leibnitz (says he) erred rather in his mode of expression, than in his conception of the true principles of his method; and he adopted a popular language, in order to offer a gross and sensible idea of the nature of the differences of quantities: but, in reality, his principle was the same as that on which the exhaustion of the antients was founded."

An objection of the second kind urged against Leibnitz is, that, had he truly been the inventor of the differential calculus, he would have shewn its utility and extensive application in various and important problems, as his rival did. Here the adversaries of Leibnitz cannot blame, without at the same time praising him *; and the grounds of his vindication are the very same with those on which his eulogium must be established: for, to shew why he did not push his researches farther, the peculiar nature of his mind and the marked character of his genius must be considered: a man must be exhibited, distinguished above all other men by variety of talent and universality of knowlege; eager to engage in a pursuit, quick to succeed in it, and sudden to quit it; directing his attention variously to history, geometry, poetry, the rights of nations, metaphysics, and literature;—ambitiously grasping at the whole circle of human intelligence.

In a contest of mere mathematical excellence, Newton and Leibnitz met on very unequal terms. The former was endowed with every quality which could form the perfect mathematician; with memory, nicety of discernment, exactness of judgment, facility of conception, and with that vigour of faculties which enabled him to bear the longest meditations, and to execute the most extensive plans. The latter was hurried by the vivacity of his genius from one pursuit to another; and his studies were distracted by the multiplicity of his occupations, or interrupted by his journies and correspondences. Unequal to his rival in comprehension and depth of judgment, he surpassed him in flexibility of mind and in rapid penetration †.

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* "*Quos vituperare ne inimici quidem possunt, nisi ut simul laudent.*"

† In the Antiquities of the House of Brunswick, (Gibbon's Miscellaneous Works, vol. ii. p. 638,) a character is drawn of Leibnitz, which is not indeed a model of encomiastic criticism, yet its conclusion is spirited and just. "The example of Leibnitz may display the extent and powers of the human understanding, but even

An objection of the third kind, which recoils on the very party that advances such an objection, is that the differential method of Leibnitz was only a generalization of the method of Barrow for tangents *; and is it not more probable that Newton, who, if not the disciple of Barrow, lived certainly in habits of intimacy with him, might have adopted such a generalization, than that Leibnitz should, who was a foreigner, and not even a correspondent of Barrow?

Yet of the method of fluxions properly so called, Newton is the sole and undisputed inventor; to him, beyond all doubt and controversy, is to be attributed the establishment of that doctrine on the consideration of motion. We will discuss, with as much brevity as possible, the advantage or excellence of this principle of motion. It will not be denied that this principle is introduced purely for the purpose of illustration; and of assisting the understanding by offering to it a mode, according to which it may conceive quantities to be generated;—not according to which quantities are really and in nature generated. The true defence of the principle of motion must be on the ground of convenience; and that of illustration, on the ground of giving a more sensible and palpable existence to that which is conceived to be too abstract in its nature, and too remote from common apprehension. If, however, for such a purpose, motion was introduced, as undoubtedly it was, the mathematical principle that was thence to be derived must necessarily be of a secondary kind; deduced not from the nature of things, but dependent on the import of words; not proceeding naturally from the affections and properties of the object of inquiry, but adopted arbitrarily, and determining those properties and affections †. The mathematical principle, on which

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his powers were dissipated by the multiplicity of his pursuits. He attempted more than he could finish, he designed more than he could execute: his imagination was too easily satisfied with a bold and rapid glance on the subject he was impatient to leave; and Leibnitz may be compared to those heroes, whose empire has been lost in the ambition of universal conquest."

* "*M. Neuton hazarde icy une accusation, mais qui va tomber sur luy même. Il prétend que ce que j'ay ecrit pour luy à M. Oldenbourg, en* 1677, *est un deguisement de la méthode de M. Barrow. Mais, comme M. N. avoue dans la page* 253 *&* 254, *de la premiere edition de ses Principes,* "*Me ipsi tunc méthodum communicasse à methodo ipsius, vix abludentem præterquam in verborum et notarum formulis,*" *il s'ensuivra que sa methode aussi n'est qu'un déguisement de celle de M. Barrow.*" Leibnitz's letter, April 9, 1716.

† (*Definitio*)—*nullatenus* κατὰ φύσιν, *ex suâ ipsius naturâ, sed omnino* κατὰ θέσιν, *ex hominum instituto, significans rem definitam.*

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the doctrine of fluxions depends, is a definition; and, as the consideration of motion had been introduced for the purpose of illustration, a figurative mode of speech was retained, and fluxions were defined to be velocities. As all conclusions are to be deduced from this definition, it is necessary to know the exact import of the term velocity. Now velocity is nothing real, but is only the relation between the space described and the time of describing it;—of which relation we have a clear idea when the motion is uniform. In variable motion, however, we inquire what velocity is; and here it is defined to be the relation between the space which *would* be described were the motion continued uniform from any point, and the time. Still, difficulties remained; this definition might convey to the mind a general idea of the nature of velocity, but was of no *mathematical* use, since the *space which would be described* could not be immediately ascertained and determined. Another step was therefore to be made, and which was made by establishing this proposition; If V be the velocity, S the space, which would be described, and T the time, S' the space really described, and T' the corresponding time; then $V = \frac{S}{T} =$ ultimate ratio of $\frac{S'}{T'}$ when S' and T' are indefinitely diminished; the real difficulty of the business, and the true object of inquiry, were then to establish what this ultimate ratio or limit of $\frac{S'}{T'}$ was; or, in other words, when a method of assigning the precise and determinate value of the limit of $\frac{S'}{T'}$ had been investigated, then and not till then could V be determined *.

Had not Newton been the inventor of this method of considering and treating fluxions, we are of opinion that very few persons would have contended either for its metaphysical or mathematical excellence; for, on the ground of perspicuity and evidence, the undertanding is not much assisted by being directed to consider all quantity as generated by motion; lines

* The velocity in variable motion may be represented in a different manner from the one already stated; thus, if the axis of a curve be taken to represent the time, and the ordinates the spaces described, the velocity (supposing its measure to be the space which would be described, were the velocity continued uniform from any point,) would be the ordinate divided by the subtangent; yet, in this case, the inquiry is reduced in a similar manner to what it was in the former; since the real object would be, the method of drawing tangents to curves,—a method which, if not identical with the differential, has a very close affinity to it.

we can conceive generated by the motion of points, surfaces by the motion of lines, *&c.*: but, when such quantities as weight, density, force, resistance, *&c.* become the object of inquiry, and are said to have their flux and velocity, then the true end of the figurative mode of speech, *illustration*, is lost. On the ground of mathematical convenience *,—that the definition of fluxions as given is commodious to deduce thence their properties and affections,—nothing is gained; since the inquiry is reduced ultimately, (*en dernière analyse*,) to the determination of the ultimate ratios of vanishing quantities, or of the limits of such quantities; which latter method is only the former algebraically expressed.

That which happened to Aristotle has happened to Newton; his followers have bowed so implicitly to his authority, that they have not exercised their reason. The method of fluxions had never so acute, so learned, and so judicious a defender as Maclaurin:—his work is most valuable for the variety of information which it contains, and for many specimens of clear and forcible argumentation:—yet whoever consults it, and sees the various artifices which he is obliged to employ for the purpose of demonstrating the several parts of the method, and the grounds of it not established in less than fifteen long theorems; and, in an inquiry purely mathematical, finds the author speaking of "causes and effects,"—"of the springs and principles of things," and proposing to deduce the "relation of quantities by comparing the powers which are conceived to generate them;"—will be convinced that this could only happen from so able a mathematician having failed to seize the right principle, and the true mode of explanation.

If, however, the English mathematicians first adopted Newton's method from veneration to him, or from a want of better information, they have since persevered in it (we may almost say) against conviction. We shall produce three instances, in which their manner of considering fluxions has been controverted with much perspicuity and forcible argumentation. The first instance is from the writings of d'Alembert, published 50 years ago.

"*Introduire ici le mouvement, c'est y introduire une idée étrangère, & qui n'est point necessaire à la demonstration: d'ailleurs, on n'a pas d'idée bien nette de ce que c'est que la vîtésse d'un corps à chaque instant, lorsque cette vîtésse est variable. La vîtésse n'est rien de réel, c'est le*

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* It has been thought a very good argument of Locke against innate principles, "that every thing could be accounted for without them." An argument of a similar kind renders the introduction of velocity unnecessary, in the doctrine about which we are speaking.

rapport

*rapport de l'espace au tems, lorsque la vîtésse est uniforme ; mais lorsque le mouvement est variable, ce n'est plus le rapport de l'espace au tems, c'est le rapport de la différentielle de l'espace à celle du tems ; rapport dont on ne peut donner d'idée nette, que par celle des limites. Ainsi, il faut nécessairement en revenir à cette dernière idée, pour donner une idée nette des fluxions *."*

The second instance is from the learned Torelli, who thus animadverts on the principle of motion :

" *Neque vero quidquam agunt, qui infinitesimas quantitates rejicientes,* momenta quædam *earum loco geometriæ inferunt ; eaque ita vocant, quod concipiantur momento temporis finitæ magnitudinis fluxu oriri. Si enim momenta hæc vires suas fluendo explicant, non aliud sunt quam ipsæ, quas rejiciunt, infinitesimæ quantitates ; sin autem nituntur, neque tamen ultro tendunt, novum vocabulum frustra inducitur, dum id, quod nihil est, momentum appellatur.*"

The third instance is from the writings of Landen, who deserted the cause of his countrymen, and dared to think for himself. In the preface to a discourse on the Residual Analysis, published in 1758, he speaks of fluxions as being properly " a branch of the algebraic art ;" and he remarks " that the principles of motion are not applicable to algebra ;"—" that it can be only in a figurative sense, that an algebraic quantity can be said to increase or decrease with some velocity or degree of swiftness ;"—" that it seems more proper, in the investigation of propositions by algebra, to proceed upon the *anciently received principles* of that art, than to introduce therein, without any necessity, the new fluxionary principles, derived from a consideration of motion ; and the rather as the introduction of these new principles is not attended with any peculiar advantage."

These mathematicians could not be accused of labouring to destroy the foundations of the fluxionary calculus, and of not having other foundations of equally solid materials to lay in theit stead. Many treatises have been written, nearly all by foreign mathematicians, in which the consideration of motion is entirely excluded ; and in some of these treatises, the principles of the doctrine in question have been laid down with a considerable degree of evidence and exactness.

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* This passage, however, did not altogether escape notice ; it gave an occasion to Dr. Wilson, the editor of Mr. Robins's tracts, to exercise his puerile criticism. His refutation of D'Alembert's argument (if refutation it can be called) consisted in representing as strict and logical, an expression, which was only meant to be an abridged one, and was adopted for the sake of conciseness and convenience.

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In the *Analyse des infinitement petits*, written by the Marquis de L'Hospital with the assistance of John Bernouilli, the principle of motion is excluded, but the *metaphysique* of the doctrine is by no means clear and satisfactory. A like character may be given to a large work of Messieurs Le Seur and Jacquier, the learned commentators of Newton. In the Residual Analysis of Landen, those problems which were supposed to require the aid of the *sublime geometry* (a title injudiciously given) were solved by a process purely algebraical: but the want of simplicity and facility in Mr. L.'s method is a very great objection to it. From the writings, however, of those two great mathematicians, Euler and D'Alembert, are to be obtained the most clear and precise notions of the principles on which the differential calculus is established. The former, in the preface to one * of his works, defines this calculus to be "*Methodus determinandi rationem incrementorum evanescentium, quæ functiones quæcunque accipiunt, dum quantitati variabili, cujus sunt functiones, incrementum evanescens tribuitur.*" He illustrates his meaning by examples, thus; if x be a quantity of which the increment is i, then when x becomes $x+i$, x^2 becomes $x^2+2xi+i^2$; and therefore

$$\text{Incr}^t\, x : \text{Incr}^t\, x^2 :: i : 2i+i^2 :: 1 : 2x+i$$

the limit of which ratio is $1 : 2x$ when $i=o$. Let $i=o$, and the limit of the ratio of these evanescent increments, which alone is regarded in the differential calculus, is $1 : 2x$; which is exact if i be absolutely o, and not otherwise. Hence, if i or dx represents the increment of x in this state, $2xi$ or $2x\,dx$ will represent that of x^2.

M. D'Alembert † discusses more fully and particularly the *metaphysique* of the doctrine, and affords us a more neat and precise idea of its true principles. He observes that the method is really founded on that of prime and ultimate ratios, or of limits, which latter method is only an algebraical translation of the former; that, in fact, there are no such things as infinitely small quantities; and that, when such quantities are

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* *Institutiones Calculi Differentialis.*

† This author (we speak of him merely as a mathematician) was extremely obnoxious to quackery; he took delight in reprobating and exposing to ridicule those authors who threw an air of mystery or sublimity over their productions, and endeavoured to make plain things unintelligible; and although, as a late writer represents, affecting to destroy the *absurdities* only of religion, he really laboured to destroy religion itself, yet in science he laboured with much greater felicity; and, in clearing away the rubbish of jargon and mystery, gave to its edifice, solidity, weight, and beauty.

mentioned,

mentioned, it is by the adoption of a concise mode of speech, for the purpose of simplifying and abridging the reasoning;—that the true object of consideration is the limit of the ratio of the finite differences of quantities;—and that, in the expression $\frac{dx}{dz}\left(\frac{x'}{z'}\right)dx$ and dz are not quantities infinitely small, but are the symbols of an arbitrary notation, denoting a certain state of dx finite and dz finite. He illustrates his doctrine by drawing a tangent to a parabola of which the equation is $ax=y^2$; he finds two expressions for the two limits, one for the algebraic limit $\left(\frac{a}{2y}\right)$ and the other for the geometrical $\left(\frac{y}{s}\right)$, which he equates, and thence deduces the value of s (the subtangent) $=\frac{2y^2}{a}=2x$. The calculus he defines to consist in determining "*algébraiquement la limite d'un rapport de laquelle on a deja l'expression en lignes, et à égaler ces deux limites, ce qui fait trouver une des lignes que l'on cherche.*"

The explanations given by Euler and D'Alembert, beyond all doubt, deserve much commendation; yet their method of considering the doctrine of fluxions is not completely satisfactory, but is objectionable on two grounds: first, that we have no clear and precise notion of the ratio of quantities, when those quantities are in their vanishing state, or cease to be quantities; secondly, the connexion and natural order of the sciences are interrupted, if we give a distinct and independent origin to that which, in fact, is a branch of analysis derived from the same common stock whence all the other branches are deduced *.

* Emerson, Stone, Simpson, Waring, &c. have published treatises on fluxions; in none of which, however, are the principles clearly laid down. To the latter author, the foundations of science were of small concernment; his ambition seems to have been to rear the edifice, and to superadd turret on turret. We endeavour in vain to trace simplicity, connection, or regularity, in the structure which he raised; it seems rather an huge pile of buildings, full of tortuous ways, steep and abrupt staircases, and obstructed passages. In the complete edition of the Works of Newton is a *liber singularis*, entitled *Geometria Fluxionum*, inserted by the editor. It begins with definitions which, mathematically, are of no use, for nothing can be deduced from them; and their terms are not appropriate to a science purely intellectual. The perusal of this tract has added so little to the clearness and precision of our ideas on its subject, that we must reprehend the "*nimiam diligentiam*" of the author, although we risk his censure, and may be styled "*homines incuriosi et inelegantes.*"

In a memoir inserted in the Berlin Acts for the year 1772, M. La Grange, who has made many important discoveries in pure analysis, and has contributed very largely to the present opulence of astronomical science, asserted that the theory of the developement of functions contained the true principles of the differential calculus, freed from all consideration of infinitely small quantities, or of limits. To establish this position more fully and particularly is the express object of the treatise at present before us; which has occasioned the unusually extensive preliminary observations which we have here submitted to the reader. We shall now endeavour, with as much brevity as possible, to give an idea of the learned author's method.

To begin with a definition of a function.

A function, of one or more quantities, is every expression in which these quantities enter after any manner whatever, combined or not with other quantities of given or invariable values, while the quantities of the function may receive all possible values.

fx designates a function of x; $f(x^2)$, $f(a+bx)$ functions of x^2 and $a+bx$.

Let, then, fx designate a function of any variable quantity x. If, instead of x, $x+i$ be substituted, i being any indeterminate quantity, fx becomes $f(x+i)$; which, by the method of series, may be expanded into this form: $fx+pi+qi^2+ri^3+$, &c.; in which, p, q, r, &c., the coefficients of the powers of i, are new functions of x, derived from the primitive function fx, and independent of the quantity i.

In this developement of $f(x+i)$, only whole and positive powers of i are supposed to be contained; which supposition is verified by expanding the several known functions: but, as this is only a proof by induction, and not exact and rigorous, M. La Grange demonstrates it *à priori* after the following manner:

'In the series resulting from the developement of $f(x+i)$, there is no fractional power of i, except particular values are given to x; for it is clear that the radicals of i can only proceed from the radicals contained in the primitive function fx; and moreover, that the substitution of $x+i$ for x can neither diminish nor augment the number of these radicals, nor change their nature; x and i being indeterminate quantities. Again; we know by the theory of equations, that every radical has as many different values as there are units in its exponent; and that, consequently, every irrational fraction has as many different values, as there are combinations of the different values of the radicals which it contains. If, then, the developement of the function $f(x+i)$ contains a term of the form $ui^{\frac{m}{n}}$, the function

tion fx will be necessarily irrational, and will consequently have a certain number of different values; which number will be the same for the function $f(x+i)$ as for its developement. This developement, however, being represented by the series $fx+pi+qi^2+$, &c. $+ui^{\frac{m}{n}}+$, &c., every value of fx will combine with every one of the n values of $\sqrt[n]{i^m}$; so that the function $f(x+i)$ developed shall have more different values than the same function not developed; which is absurd.'

This demonstration is general and rigorous, while x and i remain indeterminate, but will cease to be so when determinate values are given to x: for it would be possible that these values should destroy some radicals in fx, which nevertheless might subsist in $f(x+i)$.

Having thus established the general form of the developement of the function $f(x+i)$, the author proceeds to examine more particularly in what this developement consists, and what each of its terms signifies. He remarks that it is evident that, if in this function we seek what is independent of i, we have only to make $i=o$, which reduces $f(x+i)$ to fx; thus fx is the part of $f(x+i)$ which remains by making $i=o$; hence $fx=f(x+i)$, added to a quantity which vanishes when $i=o$, and which shall be multiplied or may be supposed to be multiplied by a positive power of i: but it has been demonstrated that, in the developement of $f(x+i)$, no fractional power of i can enter; therefore the quantity concerned can only be multiplied by some positive and whole power of i; it will then be of the form iP, P being a function of x and i, and which shall not be infinite when $i=o$.

Hence we have $f(x+i)=fx+iP \therefore P=\frac{f(x+i)-fx}{i}$: but P being a new function of x and i, we may in like manner separate what is independent of i, and does not vanish when $i=o$. Let then p be what P becomes when $i=o$, and p will be a function of x without i; hence, reasoning as before, $P=p+i\mathcal{Q} \therefore \mathcal{Q}=\frac{P-p}{i}$, and so on for $\mathcal{Q}$, &c.

Hence $f(x+i)=fx+iP$, $P=p+i\mathcal{Q}$, $\mathcal{Q}=q+iR$, &c. and substituting $f(x+i)=fx+iP=fx+ip+i^2\mathcal{Q}=fx+ip+i^2q+i^3R=fx+ip+i^2q+i^3r+$, &c.

Example; let $fx=\frac{1}{x} \therefore f(x+i)=\frac{1}{x+i} \therefore iP=\frac{1}{x+i}-\frac{1}{x}=\frac{-i}{x.x+i}$ and $P=\frac{-1}{x.x+i} \therefore p=-\frac{1}{x^2}$ and $i\mathcal{Q}=Pp=-$

$\frac{1}{x.x+i}+\frac{1}{x^2}=\frac{i}{x^2.x+i}$, and therefore $\mathfrak{Q}=\frac{1}{x^2.x+i}$ and $q=\frac{1}{x^3}$ and so on.

Hence $\frac{1}{x+i}=\frac{1}{x}-\frac{i}{x^2}+\frac{i^2}{x^3}-\frac{i^3}{x^4}+$, &c.

After some other examples, M. La Grange demonstrates this important theorem, that, in the series $fx+pi+qi^2+$, &c. i may always be taken sufficiently small, so that any term whatever shall be greater than the sum of all the succeeding terms:—but we hasten to the commodious form which he assigns to the function $f(x+i)$; and to the manner in which he shews how, in the series $fx+pi+qi^2+$, &c. the derived functions p, q, r, &c. depend on the primitive function fx. To obtain this end, suppose the indeterminate quantity x to become $x+o$, o being an indeterminate quantity and independent of i; then $f(x+i)$ becomes $f(x+o+i)$; and it is clear that the same result will be obtained by putting in $f(x+i)$ $i+o$ for i; so then the result should be the same, whether in the series $fx+pi+qi^2+$ &c. $i+o$ be substituted for i, or $x+o$ for x.

First put $i+o$ for i: then there results

$$fx+p(i+o)+q(i+o)^2+r(i+o)^3+, \text{ &c.}$$

or; developing the powers of $(i+o)$, and only writing the first two terms of each power, since their comparison will suffice for the determinations required;

$$fx+pi+qi^2+ri^3+, \text{ &c.}$$
$$+po+2qio+3ri^2o+, \text{ &c.}$$

Secondly, put $x+o$ for x; then fx becomes $fx+f'xo$, p becomes $p+p'o+$, &c., q becomes $q+q'o+$, &c. and, only considering in the developement the terms which contain the first power of o, the formula $fx+pi+$, &c. becomes

$$fx+pi+qi^2+ri^3+, \text{ &c.}$$
$$+f'xo+p'io+q'i^2o+, \text{ &c.}$$

but, since the two results ought to be identical, whatever are the values of i and o; by comparing the terms affected with o, io, i^2o, &c. we have $p=f'x$, $2q=p'$, $3r=q'$, $4s=r'$, &c. Now in the same manner as $f'x$ is the first function derived from fx, is p' the first function derived from p, q' the first function derived from q, and so on. Then, if, for the sake of greater simplicity and uniformity, $f'x$ be made to denote the first function derived from fx, $f''x$ the first function derived from $f'x$, &c. we shall have $p=f'x$; and thence $p'=f''x$, $q=\frac{p'}{2}=\frac{f''x}{2}$ therefore $q'=\frac{f'''x}{2}$ and $r=\frac{q'}{3}=\frac{f'''x}{2.3}$ and so on, substi-

substituting these values in the developement, we have

$$f(x+i)=fx+if'x+\frac{i^2}{2}f''x+\frac{i^3}{2.3}f'''x, \text{ \&c.}$$

which expression has the advantage of shewing how all the terms of the series depend on one another; and, above all, how, knowing the first function derived from any primitive function, we may form all the derived functions which the series contains.

Example. Let $fx=x^m$ $\therefore f(x+i)+(x+i)^m$: but it is easy to demonstrate that the first two terms of the binomial $(x+i)$ are $x^m+mx^{m-1}i$, whether m be whole or fractional, positive or negative; so that we have $f'x=mx^{m-1}$; hence we deduce $f''x=m\ (m-1)\ x^{m-2}$ $f''x=m\ (m-1)\ (m-2)\ x^{m-3}$; and so on:—therefore, $(x+i)^m=x^m+mx^{m-1}i+\frac{m\,(m-1)}{2}x^{m-2.2}i+\frac{m\,(m-1)\,(m-2)}{2.3}x^{m-3}i^3$, &c. the known formula of the binomial theorem which is thus demonstrated for all values of m.

M. La Grange applies his method to the demonstration of other theorems. He thus assigns the series for a^x, for log. x, for the sine and cosine of an arc x; and afterward he shews that the prime functions of such quantities as $ap\,qr$, $\frac{ap}{q}$ (a being constant, p, q, r, simple functions of x) to be $ap'qr+aq'pr+ar'pq$, and $\frac{ap'}{q}-\frac{apq'}{q^2}$.

The series $fx+if'x+\frac{i^2}{2}f''x+$, &c. which represents the developement of $f(x+i)$, we have observed, can only be formed by giving a particular and determinate value to x, which makes some radical to disappear in fx, and in its derived functions. M. La Grange examines the circumstances under which this happens; and the result of his examination is, that the series for the developement of $f(x+i)$ is legitimate when the radical disappears because the quantity into which it is multiplied becomes o: but that the series is not legitimate when the radical disappears because itself becomes o. For instance;

Let $fx=(x-a)\sqrt{x-b}$, if $x=a$ $fx=o$: but $f'x=\sqrt{x-b}+\frac{(x-a)}{2\sqrt{x-b}}$, when $x=a$, $f'x$ becomes $\sqrt{a-b}$: but, if in $fx=$

$(x-a)\sqrt{x-b}$, $x=b$ (or radical itself is equal to o) then $fx=o$ and $f'x=\sqrt{x-b}+\frac{(x-a)}{2\sqrt{x-b}}=\sqrt{b-b}+\frac{(b-a)}{2\sqrt{b-b}}=$ ∞, likewise $f''x=\infty$, &c.; in which case the series $fx+if'x$ +, &c. is faulty.

The nature and extent of our publication oblige us to pass over much curious and important matter: but we hope that this concise account of the subject and conduct of the work will be sufficient to awaken the curiosity of our mathematical readers.

We cannot leave the first part, however, without mentioning that in it is demonstrated a theorem which is remarkable, according to its inventor, for its simplicity and generality. It is this;—let u be an unknown quantity, but contained between the limits of o and x; then every function of x and of other quantities may be successively developed according to the powers of x, in the following manner:

$$fx=f.+xf'u$$
$$=f.+xf'+\frac{x^2}{2}f''u$$
$$=f.+xf'.+\frac{x^2}{2}f''+\frac{x^3}{2.3}f'''u$$
$$=f.+,\text{ &c.}+,\text{ &c.}$$

the quantities $f.$, $f'.$, $f''.$, f''', &c. being the values of the function fx, and its derivatives $f'x$, $f''x$, &c. when x is made $=o$.

In the second part, M. La Grange applies his theory to Geometry and Mechanics *. The common and known methods in the fluxionary and differential calculus for determining tangents, radii of curvature, &c. are excellent, if we regard their simplicity and generality, but are deficient in that rigour of proof for which the antient demonstrations are celebrated. Such a deficiency in the theory of fluxions is supplied by that of functions; and the problems of tangents, of the curves of contact and osculation, are in this work placed under a very perspicuous point of view, and demonstrated rigorously. The proofs of these problems depend on a form shewn in the first part to belong to the developement of $f(x+i)$; namely; $fx+if'x+\frac{i^2}{2}f''x+\frac{i^3}{2.3}f'''(x+j)$ j being an indeterminate quantity, but contained between the limits of o and i;—and on the theorem previously mentioned by us, in which it is proved

* The English word mechanics does not convey to us the same idea which belongs to *la mécanique*.

that

that i may always be taken sufficiently small, so that any term shall be greater than the sum of all the preceding terms.

The problems of the maxima and minima of quantities are demonstrated in a most satisfactory manner. It is shewn that, if the function fx be a maximum, or minimum, the prime function $f'x$ must $= o$; and that $f''x$ must be $< o$ in case of a maximum, or $> o$, in the case of a minimum: but that, if $f''x = o$, $f'''x$ likewise $= o$, and $f''''x$ is $< o$ or $> o$, according as the quantity is a maximum or minimum *; in general, that, if the derived function of any even order disappear, the function of the uneven order following disappears likewise, and the function of the succeeding even order is negative for the maximum and positive for the minimum.

The author extends his theory to the determination of questions relative to curves of double curvature, and of those problems which belong to that branch of analysis called "*Calcul des Variations*," first introduced by John Bernouilli in the solution of his famous problem of the curve of quickest descent, (*brachystochrone,*) and since perfected by Euler and the author of the present work †.

In the application of the theory of functions to mechanics, the space is considered as a function of the time, and is represented by the equation $x = ft$; hence at the end of a time $(t+\theta)$ the space described will be $f(t+\theta) - ft$; or, by the form for the developement of functions, $\theta f't + \frac{\theta^2}{2} f''t + \frac{\theta^3}{2 \cdot 3} f'''(t+\lambda\theta)$ λ being an unknown coefficient, the value of which is comprised between o and i. Now in this form the first term represents uniform motion, $f't$ the relation of the space and time being the measure of that which is called Velocity; the second term

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* To the minds of such of our readers as are possessed of the fluxional method, its affinity with that of functions will be readily suggested. In all other cases, besides the one of the maxima, a similarity of expression may be traced; thus if $y = fx$ be equation to the curve, it is demonstrated by M. La Grange that the values of subnormal, subtangent, and radices of curvature are—$yy' \frac{y}{y_1}$, and $\frac{(1+y'^2)^{\frac{3}{2}}}{y''}$; in fluxions, the values of these lines are $\frac{yy\cdot}{x\cdot}$, $\frac{yx\cdot}{y\cdot}$ and $\frac{(x\cdot^2+y\cdot^2)^{\frac{3}{2}}}{xy\cdot\cdot}$.

† See Euler's *Methodus inveniendi lineas curvas maximi, minimive, proprietate gaudentes; sive solutio problematis is operimetrici latissimo sensu accepti.*—Likewise the Turin Memoirs for the years 1760 and 1761.

represents motion uniformly accelerated where the quantity $\frac{f''t}{2}$ represents the accelerating force; the third term represents the total of the other motions; now θ may be taken so small that the motion composed of the motions represented by the first two terms shall approach nearer to the true motion, than any other motion can, composed of an uniform motion and a motion uniformly accelerated.

From the developement of the function $f(t+\theta)$, it appears that, in any rectilinear motion where the space described is a given function of the time, the prime function of this function will represent the velocity, and the second function the accelerating force in any instant: whence it appears that the prime and second functions naturally present themselves in mechanics, where they have a determinate value and signification; and it is this circumstance which induced Newton to establish fluxions on the consideration of motion.

In the latter part of his work, M. La Grange points out the true source of the error into which Newton fell, in the first edition of his Principia, resolving the third problem of the second volume. John Bernouilli discovered the solution as given by Newton to be faulty, by comparing it with that resulting from the differential calculus; Nicholas Bernouilli ascribed the cause of the error to the assumption of the 3d term of the converging series, which represents the ordinate of the given curve, instead of the second fluxion of the ordinate; and D'Alembert, noticing this error, takes occasion thence to urge the necessity of attending to the difference between *polygonal* and rigorous curves.

Here we must finish our abstract. To give a formal opinion of the work is perhaps unnecessary; its merit may be partly discerned from the extracts which we have exhibited; and our sentiments may be inferred from the large portion of the Review which we have devoted to its consideration. In questions of real science, national animosity should cease, or be supplied by a generous and dignifying emulation. To be said to rival a De la Place and a De la Grange is no mean praise; men who, by their genius and their labours, have given to France trophies more durable and more glorious than those of any warrior and conqueror.

It has been said that the true principles of any invention are most satisfactorily and truly explained by the inventors themselves; yet it is at the distance of more than an hundred years from the discovery of the fluxionary calculus, that its principles are first clearly and rigorously established. It has been reserved for the mathematicians of these days, to effect what was denied

denied to a Newton * and a Leibnitz; and to supply to their theory that evidence and exactness, the want of which makes us attribute its invention rather to the felicity of the times in which they lived, than to the excellence of their genius;—to esteem it not *pro partu ingenii*, but *pro partu temporis.*

Wood....e.

ART. II. *Discours sur la Littérature*, &c. *i. e.* A Discourse on Literature, delivered in the Academy of Sciences and Belles Lettres at Berlin, Aug. 9th, 1798. By the Marquis (formerly the Chevalier) DE BOUFFLERS. 8vo. pp. 77. Berlin. 1798. London, Elmsley and Co., and De Boffe.

THIS is a well-written vindication of literature, and literary men, from censures which the author tells us he has frequently heard thrown out against them. In a production of this nature, novelty cannot be expected: but the language is correct and elegant, and we feel disposed to question few of the author's opinions, except it be his great veneration for unknown antiquity. He hints at a possibility that Homer and Pindar might have been preceded by writers who excelled them, as much as those poets are superior to their successors. To us, this appears a very improbable conjecture. The names, if not the fragments, of such writers must have been preserved, among a people who retained the works of Homer during a long period, by oral tradition alone. The very simplicity and energy of Homer bespeak an original writer: for the depravation of taste commonly proceeds, in men of talents, from a fear of the imputation of plagiarism. A writer, who first undertakes a certain subject, uses the riches of nature without seeking to cast them in a new mould:—he expresses, in the most obvious and the most forcible terms, the idea which he would convey to his reader:—but his successor must either pass for a copyist, or he must find some other way of imparting the same idea; and the most natural expressions being preoccupied, he is forced to use those which are less obvious and less impressive. Hence the perpetual tendency of poetical language to become obscure and enigmatical.

In the course of this publication, the different branches of literature are characterized with distinctness, and not without elegance of expression. We shall extract, as an example, what the author says of the lighter species of poetry; as we

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* A learned geometrician appears to allude to Newton and his discovery in the following passage: "*Et sane, ut magnus ille vir sit, qui obscura et involuta areana arte detegit; major tamen esse videbitur, si quæ detexit, ea noverit certâ ratione demonstrare.*"

think that he offers hints which may be serviceable to some of our present candidates for poetical fame.

'Respecting this light versification, the ease of which seems to constitute its whole merit, experience will always apprize the man of talents that there is no class of them, however little fame it may afford, which does not present difficulties. The more diminutive objects are, the more narrowly are they examined; as they are more within the cognizance of all, the greater is the number of judges; and in such a case, the more numerous the judges, the more severe are their decisions, because this extensive tribunal is in a great measure composed of rivals, who reserve their indulgence for their own productions. Great works demand more force, the smaller more care. Antiquity, among its many master-pieces, may have left us a *Cameo*, which has perhaps required as long a time for its completion, as a colossal statue. Much incorrectness may be overlooked in great attempts, but, in the smaller kinds, no fault is trifling. In vain should we reckon on facility; it assists in composition, but it does not create. It advances more quickly than labour, but it does not proceed so far. Whatever may be the object, facility can but at most sketch the outlines with elegance, and labour alone can imprint on it the seal of perfection. Facility, if we credit experience too frequently repeated, is often more dangerous than useful. Do we aspire to glory? Facility excites expectations which it cannot fulfil, and engages us in situations in which it cannot support us. On the contrary, if we wish only for amusement, it leads us through ways which are delightful at first view, which were perhaps originally struck out by genius, but which have since become so much the resort of mediocrity, that they are grown impassable, and that the new visitors are obliged to drag themselves through mud, where the first roved among myrtles and roses.'

In speaking of translation, the author says, 'a good book is a creation; a good translation is a resurrection.'

The difficult question of taste is introduced, but is not discussed with much accuracy. The standard of taste is referred to general consent: but the objections to this criterion have not been considered. Taste, from its nature, cannot be an universal quality. It is the fruit of a happy temperament, and of long study, in a few individuals; their opinions may be respected, admitted, and even understood, by readers in general: but the impressions, from which those decisions result, are confined to a small number of persons. One may comprehend, and assent to the reasons assigned by, a critic for preferring Homer to Virgil, without being sufficiently acquainted with the writings of those authors, to form an opinion of his own. Other readers may judge in the same manner. Thus the general consent may be obtained, to a position on which the generality of readers are not qualified to decide; and this common suffrage, founded in reality on the accidental popularity

of

of a single writer, becomes, according to our author, the rule of taste.

The truth seems to be, that correct taste is the quality of some individuals; and that common readers rather derive opinions than taste from them.

In the second part of the discourse, the author has undertaken to shew that eminence in literature is necessarily connected with purity of morals; and it must be confessed that he has placed the arguments for this desirable opinion in a very pleasing light. It is a persuasion particularly adapted to young writers, and which can boast the authority of Milton in more than one passage; thus,

> " Spare fast, that oft' with Gods doth diet,
> And hears the Muses in a ring,
> Ay round about Jove's temple sing."

In speaking of the Epic poet, in one of his Latin compositions, he describes his mode of life in these terms:

> " *Stet pro fagineo pellucida lympha catillo,*
> *Sobriaque è puro pocula fonte bibat.*
> *Additur huic scelerisque vacans, et casta juventus.*
> *Et rigidi mores, et sine labe manus.*"

Even the severe Milton, however, admitted that excellence in lighter and less serious works was not incompatible with a more indulgent regimen.

The succeeding part of the pamphlet, in which the author examines the reproaches of inutility, conceit, flattery, &c. sometimes cast on men of letters, is written with great rapidity; indeed it requires not much enlargement, for the faults charged on literary men as a body are those of humanity, not of a profession. Those of our readers, however, into whose hands this performance may fall, will doubtless think themselves obliged to the author for his polished essay; even in those passages in which they will only find ideas reflected back to them, that must have been previously familiar to their minds. Few can be expected to write for the fastidious part of the learned world exclusively, because few are disposed voluntarily to contract their audience. We have no doubt that the Marquis will obtain the suffrage of *Amateurs* in general.

Fer...r.

ART. III. *Théâtre de l'Hermitage*, &c. *i. e.* The Hermitage-Theatre of Catherine II. Empress of Russia. 2 Vols. 8vo. Paris, 1799. London, De Boffe.

THESE volumes consist of dramatic pieces composed by the late Empress herself, by persons of her court, and by some foreign Ministers. They were originally written in French,

and were performed by a company of French comedians in the service of her Imperial majesty at her private theatre, in a part of the palace at Petersburg called *The Hermitage*, in the years 1787 and 1788. An advertisement, prefixed to the first volume by the editor, informs us that

'Catherine, on her return from the Crimea in 1787, wishing to have some little dramas represented at her Hermitage, written on *proverbs*, (then much in fashion,) which had never been performed elsewhere, engaged many distinguished persons who had followed her into Tartary, to write them; and in order to encourage by example, she herself produced several with great rapidity. An excellent company of comedians, among whom were the celebrated *Aufrêne*, and *Fastier*, the disciple of Préville, exhibited these dramas to a select audience. The contributors to these pieces were the Empress; the Count *de Cobentzel*, Ambassador from the Emperor; M. *Segur*, Minister from France; the Prince *de Ligne*, an Austrian General; *Alexander Mononof*, favourite of the Empress; Count *Strogonof*, Senator; *Ivan Schovalof*, Great Chamberlaim; *D'Estat*, a Frenchman, attached to the Imperial Cabinet; and the daughter of *Aufrêne*.'—

'It seems, in reading some of the proverbs written by the Empress, where the characters appear over-charged, and the ridicule flat, that they allude to circumstances known only in that court, which the editor is unable to explain.'

We shall give the title and tendency of each of these pieces, which are in general short, and in prose. The first volume contains:

1. *Le Tracassier*, or the Meddling-body, in one act; written by the Empress. The principal character is well sustained; and there are two or three scenes in which unprovoked malice is well detailed.

2. *Crispin turned Duenna*, a comedy in three acts, by M. *Segur*. We here discover some ingenuity in the plot and characters, but in several instances they are unnatural. We are not told how such a detestable worthless wretch as *Marphurio* became guardian to so rich and amiable a ward as *Henriette*.

3. *The rage for* (dramatized) *Proverbs*;—by the Empress. This comedy has more humour, satire, and knowlege of the world, than the preceding two pieces. Besides ridiculing the passion for *proverbial* dramas, all the affectations of modern fine ladies are exposed, and imitated by some of the French actors, then at the court of Petersburg, who were famous for mimicry; or what we call *taking off*.

An old aunt, in educating a young niece, just come out of the country, and ignorant of the most fashionable qualifications of a fine lady, initiates her in the mysteries of acquiring notice, and of alarming and rendering uncomfortable every company in which she appears. The young lady is very handsome, and has

has many admirers, who visit the aunt, in order to offer their hand to the niece: who drives them all away by her affectation. In one scene, she receives a lesson of behaviour from the aunt, and goes through an exercise, performing all the evolutions in the usual formula of *airs* and *graces*. In another, she exhibits in public: that is, before three or four lovers, on a visit of courtship; and after much distortion of look, language, and carriage, on one of the gentlemen offering to kiss her hand, she screams, and faints away. This occasions such terror, bustle, and confusion, that the lovers drop off one by one, and leave the aunt and young lady with only the servants to admire her talents and the progress which she had made in *fine-ladyism*.

As a specimen of Imperial writing, and of acquaintance with the follies of high-life, we shall translate a scene of this little drama, for the gratification of our English readers.

'Scene III. The Aunt and her Niece.

Aunt. Patty (the young lady's maid) tells me that you have had a bad night. What has been the matter?

Niece. The fleas have kept me awake.

A. These are things which young ladies must never mention before company.

N. I speak of things just as they are; I have not had a wink of sleep all night.

A. One would not suppose by your eyes that you had not slept. I should have thought, from the lively way in which you roll them about, that you had rested vey well. You don't know how to make the most of a bad night.

N. Perhaps not, aunt.

A. A pretty young lady, when she has slept ill, does not look so sprightly.

N. How should she look, then?

A. Your looks would contradict your words.

N. But tell me, aunt, what should she do?

A. She should look melancholy, and with a languishing air.

N. Why?

A. What a question! Why? because she would become more interesting. She would be pitied, and would gain a thousand little attentions, which she could never acquire by looking chearful.

N. Oh, I understand you: I shall comply with your wish, and am glad to have learned so much to-day. Is that right? (assuming a dejected air.)

A. Very well. If you should feel any pain, however slight, be sure to faint away: but remember, that the first rule in fainting is never to do it when you are alone, but before as much company as possible: which will give you great importance in society.

N. Why these are things, aunt, of which I never heard before!

A. There are still other pretty habits, which agree perfectly with a delicate state of health. You have not strength, for example, to pronounce certain words; such as Can't, Bath, Monstrous—you

should say *kaint*, *baith*, *mossous*, which is much more delicate. Do you understand me, my dear?

N. Yes, aunt.

A. When you sit down to dinner or supper, you must always complain of want of appetite, and a weak stomach: but you must not eat the less for that: you have only to be nice and dainty. You comprehend me?

N. Yes, aunt, very well.

A. In conversation, take care to make frequent use of superlatives; as frightful! hideous! horrible! shocking! There are likewise things of which you must affect to be doatingly fond: as cats, dogs, birds, squirrels; and others of which you must be as much afraid, without knowing why: a mouse, for instance, will make you die with fright; and a frog, or a snail, must tear your nerves to pieces.

N. Why so, aunt?

A. You will not feel it; but you must be afraid that you *shall* feel it. I reveal to you, my dear, the secrets of the art; and I promise you that, in a little time, by following my advice, you will become a most accomplished girl;—and, my dear child, you shall not want for counsel.

N. Oh, as for counsel, every body is eager to give it to me, since I came hither.

A. Every body! and pray who is every body?

N. One says, I must do *so*; and another, *so*.

A. Poh, poh, child, you must not mind every body:—but tell me, if you please, who it is that takes the liberty to give you this advice?

N. Who? Every one that comes to the house—Mr. Jeunet, Mr. Vieuteau, Patty, and many others.

A. What advice can Mr. Jeunet give you?

N. Oh! he promises me, if I follow his advice, that I shall be perfect, and quite different from the rest of my sex; of whom he speaks very ill,—and of you, aunt, among the rest.

A. And what does he pretend to say of me?

N. He says that you are too affected; that you often promise what you cannot perform, and seldom know yourself what you say.

A. This man is very abusive; you must not mind what he says; he is a rattle,—and Mr. Vieutau, what does he say?

N. He says, that he never saw an ugly woman in his life; young or old, in his eyes, all women are charming; and you are included, aunt, among these perfect beings.

A. His opinion of us is very flattering, certainly:—but what advice does he give you?

N. To be gentle, amiable, without affectation, even-tempered, and never to speak too loudly nor too lofty.

A. This is very good advice, but difficult to follow.

N. For my part, aunt, to say the truth, I know nothing of all this; it seems as if I never should be any thing but what I am.

A. You seem out of humour to-day, and more tired than ordinary.

N. Indeed I am, It is natural to be tired when one has not what one wishes.

A. Why

A. Why what do you wish?

N. Oh, you would certainly scold me if you knew.

A. But what is it?

N. You'll be angry.

A. No, no, pray tell me.

N. Well then, I would fain be yonder, where I was before.

A. Where? in the village?

N. Yes, aunt.

A. But when you were in the village, I was told that you passionately wished to be here?

N. That's true.

A. How comes it that you have so soon changed your mind?

N. I beg your pardon; I am always of the same mind.

A. I have not the least notion what you mean. You longed to be in town, and would now be in the country; you are in contradiction with yourself..

N. Not at all, aunt.

A. How can you make these two opinions agree?

N. It is not at all difficult.

A. How will you go to work?

N. You'll be out of humour, aunt.

A. No, no, I promise you.

N. Well then. You must know, that I am naturally tired of the place where I am, and would always be where I am not.

A. You would do well, niece, to resist this natural infirmity.

N. Nay, I'll tell you farther—

A. What?

N. I always wish for what I have not; and as soon as I have it, I think no more about it.

A. With such a disposition, child, you never can be happy as long as you live. I advise you — — —

N. Ah! now we shall have a shower of advice!

A. Advice is necessary for you.

N. It seems to me as if advice resembled a reprimand as much as two drops of water resemble each other.

A. It is a medicine.

N. Oh, I never swallow a medicine without making ugly faces; I saw myself in the glass when I was taking one, the other day, and I looked frightfully.

A. But does Patty's advice turn your stomach?

N. Not at all, my dear aunt; for she tells me to let things go how they will, and try to divert myself as well as I can.'

4. We now come to the next play, entitled *The Jealous Valencian*, a *Proverb*, in two acts, by M. *D'Estat*.

The plot of this piece resembles that of *the Padlock*, and of many other plays and farces on similar plans. The first act is spirited, and the dialogue is enlivened with wit and humour; the second, however, is neither so lively nor so natural as the first. Some improbabilities disgrace the plot; and the denoue-

ment, though what might be expected, is brought on too rapidly.

5. *The Flatterer, and the Flattered:*—written by the Empress to determine a wager, which she had laid, that proverbs were so easy to make, that La Fontaine's fable of the Crow and the Fox would answer the purpose as well as any thing else. Who is so well qualified as a great Princess, to write on the subject of flattery? Her Imperial Majesty has manifested great experience in courtly adulation, and a thorough knowlege of the disinterested motives with which it is offered at the shrines of wealth and power. The dialogue of this little drama is supported with great spirit and knowlege of mankind.

6. *Gros-Iran*, or the State Reformer. By Count *Cobentzel*; founded on an anecdote which the Empress frequently related. This Princess, being very desirous of seeing a foreigner who had produced a work of considerable merit on commerce, invited him to Moscow; which exalted him so much in his own opinion, that he thought he was called to govern the empire. His vanity and absurd boasting drew on him some humiliation; and the Austrian Ambassador, availing himself of this anecdote, has dexterously seized the opportunity of praising some of Catherine's new institutions.—This piece, written on the Eve of the French Revolution, evidently proves that the court of Petersburg was not ignorant of the dangerous tendency of some of the new doctrines.

7. *Coriolanus*, a tragedy, by M. *Segur*, represented at the Hermitage in 1787. This drama, in five acts, and written in verse, has great merit, and seems worthy of being represented in a great national theatre.

8. *L'Insouciant*, or the Thoughtless Man. Written by M. *Mononof.*

This piece would be wholly unintelligible, if the reader were not informed that the principal character was a portrait of a weak and absurd person at the Empress's court, where his humours were the constant subject of conversation. His singularities seem too silly to excite laughter elsewhere.

9. *The Ridiculous Lover:* composed on the Proverb, *A good name is better than great riches.* This play, written by the Prince *de Ligne*, is not without merit.

Vol. II.

10. *Les qui-pro-quo*, or the Mistakes. By M. *D'Estat.* In most of these little pieces, we are informed of the peculiar cast of the several characters, by their names: as, in the present drama, we have Mr. *Hemistich*, a poet, Mr. *Boniface*, his father, Mrs. *Tender*, the neighbour of Boniface, Mr. *Signature*, a conveyancer,

veyancer, &c.—which is as clumsy a way of making a character known, as that of the sign-painter who, under the picture of an animal which many, indeed, would deem a non-descript, wrote, " this is a Bear.",

This comedy turns on the *equivoque* of a poet applying every word that is said by the rest of the characters, to a play which he is writing, and of which they have not the least idea. The French proverb, on which it is built, is this, *Defiez-vous des gens qui n'ont qu'une affaire* :—" never depend on people who have only one matter of business in their heads."

11. *The Deaf Man and the Stammerer.* By M. *Segur.* The whole humour of this piece consists in turning to ridicule the natural infirmities of two old gentlemen; which, though in themselves unwarrantable subjects of mirth, generally succeed in exciting it on the stage: particularly that impediment called *stuttering*; of which Steele's *Grim-Gribber* furnishes an example.

The French proverb on which this comedy is founded, *à quelque chose malheur est bon*, seems, in its import, an equivalent to our—" 'Tis an ill wind that blows nobody any good."

12. *The Travels of Mr. Bontems.* By the Empress. On the Proverb, *A beau mentir qui vient de loin.* This is to ridicule the wonders related by travellers, and the credulity of those who believe them. " He talks like a traveller," whom nobody believes.

13. *Insipidus.* A miserable attempt at humour and satire, to prove that " a bad author is as bad a friend." By M. *de Schovalof*, Great Chamberlain.

14. *Il n'y a point de mal sans bien.* " There is no evil without some good." By the Empress. The dialogue of this little comedy is the most spirited of any one in the 2d volume. The characters are all disputatious: but for a *why* every one has a *wherefore;* a salvo for every difficulty. The dialogue is a string of proverbs; the complaints of one character are constantly qualified by the good which another extracts from the poisonous plant: healing by hemloc and night-shade, which, though deleterious in themselves, contain sanative qualities when administered with skill. If a man has fallen away, " he's only the more alert and active for it."—If he is nothing but skin and bone; " 'tis so much the better for his health: he's no longer a collection of foul humours." If his wife is a scold; " it is from anxiety for his good." If jealous; " it is a mark of love." If she dies, and he is impatient to marry again; " it it a proof that he had sustained a loss." If he refuses good offers for his daughter, till she becomes an old maid; " she'll be the more steady and prudent whenever she does marry."

If a mother chides her daughter from morning to night; "it proves what care she takes of her education." If during this time the daughter is not allowed to utter a word in her own defence; "when a parent is giving advice, she's not to be interrupted." If a female is fantastical and capricious; "it prevents monotony, and renders her more interesting by variety of character." &c. &c.

15. *The Elopement.* By M. *Segur.* A spirited comedy, of one act. The character of a valet, of the *Scapin* and *Sharp* kind, is well supported. The other characters are strongly marked, and the dialogue is seasoned with wit.

16. *The Morning of a Virtuoso.* By Count *Strogonof;* on the proverb, "all is not gold that glitters." We expected a piece in the style of Foote's Taste, but were disappointed. There is little of the technical cant of *connoisseurship* in the drama, but much more imbecility in its hero, than an English audience could imagine it possible even for the head of the most blind admirer and collector of curiosities to contain. The credulous virtuoso is made to believe that, in an island of the Pacific Ocean, the inhabitants live two hundred years; and, like the oak in Europe, are one hundred years in arriving at full growth, and another in decaying; with this difference: that, having completed the first century in attaining maturity, the second is spent in growing younger, and in returning to infancy by the same degrees of mental and corporeal alteration by which they had advanced in size and intellect. Thus a pretended native of this island, who persuades the Virtuoso that he is 150 years old, calls his daughter (whose age he asserts to be 180) his mother; and his grandson (of 4 or 5 years old) his grandfather. An ingenious illustration of second childhood!

17. *The Conceited Captain, or the Coxcomb punished.* By M. *Segur*; on the proverb, *qui court deux liévres n'en prend point.*— "He who pursues two hares will catch neither of them." This little drama is not destitute of merit.

18. *The Blunt (or Inconsiderate) Man.* By M. *Segur.* There is much lively satire in this comedy, which might be called, "the Plain Dealer." It is founded on the proverb; "the truth is not to be spoken at all times." Whoever disdains to bestow or receive the common civilities of society, which the world in general practise and expect, and tells every one his mind, will be shunned like a wild beast, for his sincerity. The characters seem to have been portraits of persons well known at the Russian court.

19. *Imitation of Shakspeare,* a play in five acts, written in the Russian language and translated into French, by the Empress,

press, and styled 'an historical scene, without observing any theatrical rules.'

We were very curious to peruse this drama, in order to discover how far the imitation was carried:—but it chiefly consists in the neglect of the unities. There is very little discrimination of character, though the interlocutors amounted to twenty-two. The reflections with which our admirable and unrivalled bard has enriched his historical plays, exclusively of the diversity of character, manifest such profound knowlege in human nature and the heart of man, that we believe that no English critic, however sour, and how much soever he may be attached to Aristotle, wishes the unities to be more regular than they are. The names, however, of the founders of the Russian empire, which appear to us so harsh and barbarous, doubtless convey to its inhabitants local and patriotic sensations, which must give a value to this drama, unfelt by the natives of other countries.

A speech in favour of clemency seems the best in this play. It is put into the mouth of the consort of a prince lately arrived at the sovereignty by the decease of his grandfather, against whose succession the son of a younger branch of the family had rebelled, and been taken prisoner after a defeat. It is debated in council in what manner to treat the captive insurgent; and it being proposed that he should immediately be brought to trial, the princess asks his accusers whether the vanquished prince *Vadim* had not been sufficiently punished by the failure of his enterprise, and the general blame which he had incurred? *Rurick*, the reigning prince, exclaims:

'Oh! *Evinda*, how grateful it is to my soul to discover in thee, on all occasions, such benign sentiments of clemency and humanity!

'*Evinda*. Thou, my beloved Lord, art my model: who only seest in an offending mortal, a being born with passions, vices, and infirmities. Every one has not the vigour of mind which is requisite to mould his actions and conduct to existing times and circumstances. Many are guilty of crimes more from levity and want of reflection, than from corruption of heart. *Vadim* is young; he was brought up in the court of his grandfather, and was surrounded by flatterers, who inflamed his soul with pride, and excited him to daring deeds. The race of Slavonian princes is courageous.... Their blood, my Lord, flows in your veins... *Vadim* is your cousin ... The people adore clemency... Pardon, my Lord, the liberty which I take in this freedom of speech. You love truth, and draw it from others by gentle manners and affability. You detest audacity, and know how to chastise it, when necessary.'

The rebellious prince was pardoned, and, being restored to his rank in the state, became a loyal and dutiful subject.

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This play concludes the collection; and from the brief analysis and descriptions which we have given, we think that our readers will entertain sentiments by no means unfavorable to these *Imperial Recreations.*

D.r B...y.

Art. IV. *Louis* XV. *et Louis* XVI. *i. e.* The Reign of Louis XV. and Louis XVI. By Anthony Fantin-Desodoards, French Citizen. 5 Vols. 8vo. pp. 400 in each. Paris. 1798. Imported by De Boffe, London.

Two contributions of this author to the history of the French Revolution have already been noticed by us, in vol. xxiii. p. 557. and vol. xxvii. p. 498. He now undertakes the preliminary narrative of the reigns of Louis XV. and XVI; and the time is but just arrived for accomplishing that task with propriety. The important consequences, which were to flow from the anti-christian heresy of Voltaire and his coadjutors, were not likely to forcibly impress any contemporary historian. Still less was the doctrine of Quesnay, concerning the exclusive expediency of a land-tax, apparently pregnant with mighty political innovations. It is only since the eventual preponderance of the sects founded by those men, that their historical importance can be properly appreciated. The conflicts about Jansenism, between Louis XV. and his parliaments, would now be despised by the narrator, had they not offered models and precedents of resistance to those parliaments of Louis XVI. which accomplished the convocation of the States General, by their courageous remonstrances. Thus it happens that posterity continually views even the past with an altered eye; dropping the facts which are insignificant to its present condition, and rummaging the lowest vaults of obscurity for those which have occasioned the extant phænomena.

Vol. I. p. 11. The minority of Louis XV. is chiefly remarkable for the ascendancy enjoyed by the Duke of Orleans, in virtue of his hereditary rank; and for the attempts made by him to extend and strengthen this authority by means of the parliaments. Many hereditary hatreds (against the Polignacs, for instance,) appear to have been founded during his regency, which continued still to operate during the recent revolution. The Duke of Orleans had assumed the regency in right of his birth, and in express opposition to the will of Louis XIV., which he employed the parliament of Paris to annul; and in return, he restored to the parliament, by a declaration of 15th Dec. 1715, the right of remonstrance previously to the registration of the edicts of the chief magistrate. His regency had a character of usurpation; and, like most other usurpers, he

he increased the privileges of the subject, in order to strengthen his authority against the original sovereign.

P. 20. A proposal to assemble the States General was made in 1717, at the time of the financial difficulties which were so unsuccessfully combated by the schemer *Law:* it was espoused by the selfish patriotism of the Duke of Orleans, but was withstood by the principal nobility.

P. 26. To Lord Stair is ascribed a direct attempt against the life of the Pretender, by hiring assassins. Many other particulars, such as the alledged offer of Gibraltar to the Spaniards, p. 32, merit the notice of English annalists.

In imitation of the Abbé Raynal, who intersperses his history with eloquent seditious diatribes, this author introduces bold appeals to the liberal passions, and has addressed (p. 148) the Spanish nation in a manner less favorable to the passive tranquillity of a timid superstition, than to the turbulent independence of reasoning energy. By such declamations, it is no doubt hoped to prepare the people of Spain for accepting one of those nominally free constitutions, which the French republic usually confers on its conquered provinces. The Spanish churches will afford a rich booty, and the Spanish Indies a rich tribute.

This author ascribes to the private theatricals introduced by the Marchioness of Pompadour, that corruption of female manners and that boldness of the sex which were so conspicuous in France before the revolution; and which, by rendering husbands indifferent to their pretended families and to their domestic comforts, have been so powerful a cause of the general desertion of their hearths and altars by the leading men of France.

P. 158, vol. 2. The administration of Machault is noticed with merited attention. This minister was the first author of a plan for subjecting the ecclesiastical property of France to taxation by the state. His scheme was to sequester, on the deaths of the incumbents, half of the income of every living which produced more than a given salary to the clergyman. A cry of danger to the church, which intimidated the piety of the king, excited successful opposition to this projected profanation; and Machault was compelled to resign: but his character stood so high in the opinion of the prince, afterward Louis XVI., that the first attempt of this monarch to nominate a minister of his own was made in favor of Machault. The infidels took advantage of the controversy excited by this project, and circulated bitter attacks on church power, church arrogance, and church avarice.

P. 164. The literary journeys of *Lacaille* and *Lalande*, to determine the figure of the earth, are too slightly mentioned. By narrating useful enterprises with a preference of attention, the historian can best secure their repetition.

We shall extract this writer's account of the origin of the Encyclopedia, by which the tenth chapter of the ivth book is occupied. (Vol. ii. p. 188.)

'While the Jansenists and Molinists were busying the multitude with their controversies, *D'Alembert* and *Diderot* were compiling, under the name of Encyclopedia, a vast and ill-digested repertory of human knowlege. In 1752 appeared the first and second volumes; in which the editors had included reflections on religion and politics, equally alarming to the fanatics and to the enemies of public liberty. The priests, especially, repeated incessantly that this lump of argumentations, some solid and some captious, far from teaching men to think, would only lead them to doubt those principles on which the institutions of society depend.

'The composition of this vast work necessarily required a multitude of fellow-labourers. This was a centre of union, and a rallying point for the philosophers; who began to form a body without owning it. There was in France an encyclopedic sect, as there was in Greek an ionic sect, an academic sect. *Voltaire*, although remote from the metropolis, was the chieftain of the encyclopedists. The assistance which he gave, the greatness of his celebrity, the universality of his talents, and his access among sovereign princes, conspired to obtain for him this rank.

'The two editors, vain as they were, considered themselves merely as the lieutenants of *Voltaire*. To dissipate prejudice, to annihilate error, to enlighten mankind, to prepare the reign of concord and beneficence on earth, formed the bold design of the encyclopedists. They undertook, each in his own department of society, to propagate without relaxation, and in every possible form, a doctrine which was abominable in the eyes of their enemies, but which their partisans considered as humane and salutary.

'The great number of assistants, who had not equal talents, was the principal obstacle to the accomplishment of the magnificent promises made by *D'Alembert* in his prospectus of the work. The Encylopedia is an edifice of gold and of dirt. It must be re-made over and over again, before it can attain perfection; and even then the discrepancy of style, and the inequality of erudition and intellect, will always prevent a man of taste from regarding it as an harmonious whole.

'The Jesuits were the first to attack the Encyclopedia: they entered into this warfare as much from interest and pique, as from zeal for the public good. The Encyclopedia was intended to supplant their dictionary of *Trevoux;* which was a mortification to the society. They caballed, therefore, against the new work; and having found out twenty articles which were susceptible of an offensive interpretation by the civil or ecclesiastical authority, they obtained

tained a decree of council, which condemned it. The police-officers went to the house of *Diderot*, and seized his manuscripts. The Encyclopedists soon recovered this temporary inconvenience. Their main point was accomplished; they had a centre of unity, an established hierarchy, a system to inculcate, and signs of recognition. They knew that persecution is the aliment of zeal, as of fanaticism; they sowed with labor, but they expected a grand harvest.

'The Jesuits, meanwhile, were persecuting with equal obstinacy the Encyclopedists and the Jansenists. The clergy opened its ordinary assembly on the 28th May 1755, and great divisions arose on the bull Unigenitus. It was agreed to address the Pope, in order to receive his paternal instructions.'

The attempt of *Damiens* on the life of Louis XV. is treated with excessive gravity. Even the Dauphin is supposed to have been a parricidal accomplice. It is more probable that *Damiens* was an insane Jansenist, wholly undirected; and whom an humane prince would only have sent to a hospital for lunatics, for striking at him with so insignificant a weapon as a common clasp-knife. The savage cruelty of the execution was a disgrace to the national jurisprudence.

The suppression of the Jesuits is narrated with insufficient detail. (P. 358.) This order ranks so highly in point of erudition, and has so much merit for superintending well the department of education, that we almost feel inclined to regret its non-existence.

Vol. 3. p. 8. Many curious, and, (notwithstanding Mr. Boswell's work*,) to us, new particulars of the Rebellion of Corsica are here given. The senators of the opulent commercial *Genova* did not favor, with liberal sagacity, in the dependent island, the establishment of manufactures, the free exportation of produce, and the consequent abolition of *feudal farming*; which reduces every tenant to a mere husbandman, and every husbandman to dependence for the very instruments of labor on his landlord,—or rather on the steward of his metropolitan landlord. The revenues of the national church were absorbed by a foreign continental clergy: in the project of reconciliation, it is proposed to fill three of the five bishoprics always with Corsicans. The civil employments, in like manner, were considered as a patrimony of the Genovese nobility: in the petition for redress, the Corsican barristers claim that all the justicers, nine of the assessors, and one of the two auditors, shall be native and resident Corsicans. The privilege of self-taxation is arrogated by the assembled heads of parishes (*Capi di Pieve*). The mediation of France hatched these eggs of well-founded discontent into rash claims of in-

* History of Corsica; see Rev. vol. xxxix.

dependence; and then forcibly reduced the war-worn island into an unconditional transfer of its obedience. *Muratori* attributes to the party of *young men*, in the Genovese senate, those irritating military measures which provoked the desperate decision of the Corsicans, and their unfortunate struggle for independence.

A curious detail occurs (at p. 45) respecting a monopoly of corn, undertaken by the king and the ministers for the sake of the mercantile profit expected from the operation. As soon as the purchases were completed, an edict permitting the free exportation and importation of corn, in all times and circumstances, was published; which had the effect of raising the price, and of bringing into popularity among the landed interest the doctrine of *Quesnay*, on which this edict was supposed to be founded.

A seditious diatribe (p. 128) is addressed to the inhabitants of Louisiana, who are supposed to view with impatience their subjection to the court of Spain. This may be considered as an indication of the views of the Directory, under whose patronage this author is understood to write. How much more for the interest of that province would it be to incorporate with the United States of North America!

The great firmness of the French parliaments, at the close of the reign of Louis XV., both in the affair of the Duke *d'Aiguillon* and in that of the *lit-de-justice*, is here ascribed (p. 214) with great probability to the underhand support of the Duke *de Choiseul*, then minister, but threatened with dismissal by the dislike of Madame *Dubarri*, the king's mistress. *Maupeou* had little difficulty, after the dissolution of these independent parliaments, in moulding the new members to ministerial servility.

The Swedish revolution is treated at p. 248; and some new particulars are given respecting the influence of France on that occasion. The conduct of Gustavus III. was completely tyrannical, however considerable were his personal virtues.

(P. 290.) So profligate was the rapacity of the French court become under Louis XV., that in 1772 the minister of finance *Terrai*, an ecclesiastic, seized on a sum of money subscribed in Paris for the building of a new hospital, and applied it to the wants of the courtiers. The death of the monarch took place in 1774.

Vol. 4. opens with the accession of Louis XVI. He had drawn up a letter to invite *Machault* to be his minister, and was induced by his aunt to direct it to *Maurepas*. This almost imbecile ductility was the great cause of his reigning so long. Like an echo, he always repeated after the last speaker: any party therefore might hope to bend him to its views, and

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to employ him as its instrument. This hope prevented the revolutionary writers from attacking the opinions favourable to royalty. The word republic was never started, either while *Turgot* was organizing provincial administrations, or while the parliaments were soliciting the assemblage of the States-General. It had all the stimulus of novelty, when broached by the Girondists. Every thing was ripe for a revolution in France in 1775: but the American war withdrew the public attention from domestic change. Had the revolution taken place at that time, it would not have proceeded so far: Christianity and the church would probably have been given up even then: but royalty and nobility would both have retained a modified and permanent establishment. Opinions are always progressive. To defer alteration is not to escape it,—but to incur a greater magnitude of change.

The extraordinary administration of *Turgot* is perhaps not narrated with sufficient detail. Pointed out to the king by his popularity among the Encyclopedists, he did not break, when in power, the implied conditions of his elevation. He acted for the people, not for the sovereign. He restored the independent parliaments of *Choiseul*: he introduced to official experiment the projects, and to popular circulation the doctrines, of the physiocrates:—but his grant of the freedom of the corn-trade having excited among the merchants of the seaports a spirit of speculation in grain, the commodity rose,—and so did the mob. *Turgot* then sent round among the clergy a sort of homily on the corn-trade. Previously to its promulgation some bishop observed that the king had not been anointed. *Turgot* thought the ceremony needless. The insurrections continued; and at last *Turgot* deemed it expedient to comply. —His next measures were the abolition of statutes of apprenticeship, or rather of the privileges attached to septennial servitude; and the abolition of the parish-duty performed on the highways, which French prejudice considered as degrading, which was unjustly confined to ignoble tenures, and which was attacked for the sake of instituting a sort of provincial magistracy, or justice-meetings, preparatory to a more formal county-representation. The independent parliaments refused to register these edicts. *Turgot* was not superior to the use of despotic means: he had sent *Necker* to the Bastille, for writing in favor of restrictions on the corn-trade: he now held a *lit-de-justice* to emancipate apprentices. The turbulence of the vulgar was thus re-inforced by the frown of the just: the courtiers insisted on the unpopularity of the minister, and this with Louis XVI. was a sufficient ground of dismissal.—From this time, the history of France is familiar to every newspaper politician.

Some curious particulars occur at p. 230, relative to the active and benevolent life of Paul Olavides, a native of Peru, and a judge of Lima, but in early life a dissipater of his patrimony. He came to Europe, married a rich widow, visited Paris, altered some French tragedies for the theatre of Madrid, and contributed to the periodical publications of Feijoo and Clavigo. He drew the attention of the Marquis d'Aranda, a daring friend, like Azzara, to liberty of sentiment. He was sheriff or *personero* of Madrid at the time of the expulsion of the Jesuits. Intrusted with the civil lieutenancy of Seville, he undertook the cultivation of a vast desert called Sierra Morena, which he distributed in lots among some German colonists, and which is now furnishing much of their Sherry to the wine-merchants of Malaga and Cadiz. Unfortunately, these colonists were protestants. Some neighbouring monks undertook and failed in their conversion. Olavides, to rid his colony of such importunity, applied for the removal of the convent. The inquisition took alarm; and, on the disgrace of his protector, Aranda, committed him to prison in November 1778. He was disennobled, his property was confiscated, and a penance of eight years was enjoined; during which he found means to escape into France. The colonists, thinned by pestilence, worn by toil and climate, and harassed by heresy-ferrets, were ordered back to Germany, and deprived of the vine-yards which their own industry had created, and the promise of which had tempted their migration.

Soon after the admission of *Necker* to the ministry, about 1777, a project was laid before the privy-council, for restoring to the protestants the rights of citizens. The proposal came before the parliaments: but the alarms of the bishops induced the court to withdraw a measure which it originally countenanced. It was the French attempt at a repeal of the test-act.

Vol. 5. p. 102. Strange circumstances are related of the English war with Tippoo-Saib, which have given occasion also to a separate * work of this author; who professes to have translated from the Hindoo language some memoirs of that Sultan written by himself.

Concerning the Revolution of France, M. Desodoards chiefly repeats, in a more condensed form, the narrative which we have already reviewed; and which has the merit of an indifference about the recent changes of his country, natural only in an absentee, and favourable to impartiality, though not to vivacity and interest.

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* *Mémoires de Tipoo-Zaeb, ecrits par lui même, & traduits par Desodoards.* 8vo. Paris. An. 4.

ART. V. *Les Colons de toutes Couleurs*, &c.; *i. e.* The Colonists of all Complexions. By M. DE TEXIER. 3 vols. 12mo. about 300 pages in each. Berlin. 1798. London, Dulau and Co. Price 12s. sewed.

AMONG barbarous nations, nothing appears so attractive as descriptions of luxury, magnificence, and refinement, carried to their highest pitch of dazzling splendor and profusion. The tales of the Arabians are therefore filled with delineations of glittering pomp and gorgeous pageantry; every apartment is floored with sandal, and ceiled with nacre; the silken tapestries are strained on studs of diamonds, which reflect the brilliancy of golden lamps fed with oil of roses; and slaves, beautiful as the Perics, execute symphonies, spread the repast, glide in voluptuous dance, or beckon to the secret sofa. Among *polished* nations, however, where luxury begins to cloy, and the grimace of formality to fatigue, the tales which find most favor are those of Otaheitean simplicity and unsophisticated nature. The imagination then delights to sail in quest of some Pelew island, to repose in improvident leisure beneath the banana's shade, beside a shining stream; or to dwell in a hut of reed among friendly villagers, where all is plenty, pastime, innocence, ignorance, and bliss. To this propensity of civilized man to escape, at least in idea, from the trammels and restraints of surrounding considerations, M. DE TEXIER has addressed himself in the novel before us. He supposes some white, mulatto, and black inhabitants of Saint Domingo, whom reciprocal services had attached to each other, to have fled from a servile war at home to the African coast. They penetrate into the heart of the continent, and settle on the southern bank of the Niger. They bring with them enough of the language, the arts, and the culture of Europe, to teach the Mandingoes whatever was yet wanting for their defence, their accommodation, or their improvement. They legislate in morals with elegance, in laws with equity, and in tactics with spirit; and they gradually form a new nation of whites, blacks, creoles, and mulattoes, whose eclectic institutions claim less service, allow more liberty, and confer more enjoyment, than are compatible with the complexity of the political fabrics of Europe. They stop by choice in an early stage of social progression; and they retain a great deal of their native independence, and all the Arcadian simplicity, with only so much of cohesion as is necessary to repress crime, and to secure defence.

From this outline, it will be perceived that the novel bears a considerable resemblance to *the Island of Stolberg*, and to the

Memoirs of Planetes *. It is executed with less taste and nobleness than the former, and with less argument and profoundness than the latter of these works: but it is more entertaining, though more trifling, than either, by the freer admixture of mere incident, and by the greater approximation of the personages to every-day nature. Should Mr. Wadstrom obtain, from the different governments of Europe, an universal acknowlegement of the independence of Sierra Leone, or Bulam, perhaps such a national population as is here described may result, hereafter, from the well-meant spirit of his endeavours, and the tasteful liberality of his institutions.

A short extract will give some idea of the execution of this well-imagined romance:

'The cornac (keeper) of our elephant now gave Edward a specimen both of the skill of the master and of the intelligence of the pupil. A sort of language has established itself between them, consisting partly of such inarticulate tones as the hunters use, and partly of pantomime. Some aid is derived from an iron rod, hooked at one end, and pointed at the other. The hook serves for a rein, and the point for a spur. Edward was much surprised to find this mode of travelling so pleasant, and so much swifter than the ponderous proportions of the animal seem to announce. It keeps pace with a horse trotting, and it never stumbles nor slackens.

'The journey gave Edward an opportunity of personally examining the relation of the populousness to the soil, and the general state and system of our agriculture and well-being. They differed no where widely from what he had already seen in the neighbourhood of Adriani. Every where he saw the same mediocrity, the same marks of general ease and comfort, the same absence of great wealth or property. Inequality has not produced indigence, because no temptation exists to accumulate by invading the inheritance of others. The general affluence is the more easy to preserve, as the vast quantity of unoccupied land will long keep off that overflow of populousness, which is attended with the extreme depression of the multitude. Around every village he found a certain quantity of waste, which is progressively to be allotted to the children and grand-children of the inhabitants. These vast commons facilitate meanwhile a great multiplication of cattle. In time, no doubt, other animals will give place to man; or rather the arts of cultivation will enable us to rear, on a given surface, more men and more animals.'

This novel would gain by some abridgments and changes. It is much to be wished, indeed, that all those who undertake the translation of secondary works of art would prune and curtail more freely: most of our translated romances would be improved by the omission of half of their contents; and we doubt not that foreign reviewers say the same of our own.

Tay.

* See Rev. vol. xviii. N. S. p. 22.

ART. VI. *Mémoires d'*HYPOLITE CLAIRON, &c.; *i. e.* Memoirs of Mademoiselle CLAIRON. With Reflections on the Dramatic Art; published by herself.

[*Art. concluded. See our last Appendix*, p. 557—560.]

WE have at length procured a copy of this singularly curious and entertaining piece of self-biography; *parts* of which are written with such spirit and originality, as manifest the author to be possessed of a strong mind, which has enabled her to reason and reflect on her professional duties in a more acute and profound manner than any of her predecessors. Yet, as a *whole*, there is so great a want of order and arrangement, that it seems rather a collection of fragments, preparatory to a biographical work, than a regular series of incidents, chronologically traced.

The work begins with the history of an *Apparition*; by which, during the early years of her dramatic fame, Mademoiselle CLAIRON was haunted and persecuted in an extraordinary manner. Then we have reflections on the dramatic art, with some of which we presented our readers in our last Appendix; and here we have not only an analysis of the chief characters which she represented, but the principles on which her fame was built. After this, we meet with a portraiture of Mademoiselle *Dumesnil*, a rival actress of great reputation. All these things, and more, are detailed before the fair writer speaks of her own *birth*, *parentage*, and *education*, and of the gradations by which she arrived at celebrity;—and after having divided her theatrical life into three periods or sections, she again returns to her first reception at the *Comedie Françoise*, or great national theatre, in order to insert some anecdotes concerning herself, with which she was unwilling to interrupt the narration.

In the section of these Memoirs which this renowned actress entitles the two *Electras*, (tragedies on the same subject by *Crebillon* and *Voltaire*,) she says:

'I trust that I shall not offend those who pursue the same professional career, by supposing them to be, during youth, as ignorant and vain as myself.

'The applause bestowed on my first attempts, the verses addressed to me from all quarters, the adulation of those who were dying at my feet, the exaggeration of fools, and the jealousy of rivals, did not suffer me to entertain the least doubt of my being the most extraordinary person that ever trod the stage. When the names of two great actresses, *Lecouvreur*, and *de Seine*, my predecessors, were mentioned, I felt that disdain which those who succeed me will probably feel whenever my name shall be pronounced in their hearing.

'Mademoiselle *Lecouvreur* was no longer in existence; I could not therefore judge of her talents. Mademoiselle *de Seine*, who had retired from the stage during ten years, constantly attended my first performances; and the applause which she bestowed on me, particularly in the character of Electra, on the execution of which part her greatest glory was said to have been founded, completely turned my head. I took every possible step to get acquainted with her, and to prevail on her to declaim a scene in that part. A mutual friend procured me both those gratifications.

'When she entered the room, I could only perceive a woman past her prime, announcing nothing of the dignity which I feared and expected. Her head was ill dressed, she wore an ordinary gown, and had no other expression in her countenance than that of utter indifference; she had nothing imposing in her appearance; and the sound of her voice, and the few trifling sentences which she uttered, would have inclined me to believe, if I had not seen her, that I heard the voice of a froward child. I triumphed. Her unwillingness to repeat, before me, any speeches in the part which she used to act, appeared as much a confession of her insufficiency, as of my superiorty. At length she consented to go through a scene of the third act of Electra; and I was framing in my mind a little civil, false, but well-turned compliment, which I could not help bestowing, were her declamation ever so bad: — — — — — but the dignified air which she assumed, on rising to arrange the chairs in rows to form a stage and side scenes, and the change which I perceived in her whole person, as the moment for beginning approached, changed also my own ideas; my vanity faded; I felt tears coming fast into my eyes; and when she spoke, the accents of despair, the deep affliction in her countenance, the noble and affecting manner in which her whole person was absorbed, took entire possession of my soul, enlightened it, and drew me to her feet; where, in punishment for my impertinent presumption, and to free me from it for ever, I confessed all my previous sensations.

'Emulation is necessary to excite diligence, and we should make no progress without it: but we ought to keep vanity at a distance.'

Our next extract shall be the account which this tragic heroine gives of the persevering apparition by which she was tormented: but we shall make no remarks on it, leaving it as a problem for our ingenious readers to solve at their leisure.

When Mademoiselle Clairon first appeared on the stage, she was besieged by an army of young fops and old libertines.

'Among the rest, (says she,) was a Monsieur *de S.* son of a merchant of Brittany, for whom I had a sort of friendship: but he hoped for something more. This young man was of so gloomy, fretful, and suspicious a temper, that, after a certain time, I dismissed him. On his being taken ill, however, I bestowed on him all the kindness and attention in my power: but, when he was recovered, I refused him admission again into my house, and returned him all his letters.

'Two

'Two years afterward, he died, having no one with him but an old lady, his relation, the only society which he had admitted for a long time. One evening, when several friends, and my mother, had supped with me, after having been very chearful, I sang several lively songs: but when the clock had struck eleven, we heard a cry of the most lamentable complaint, for which we were unable to account. We sent several persons into the street, to try to discover whence this lamentation proceeded. My friends and neighbours had all heard the mournful cry at the same time, constantly under my window; and it as constantly seemed to be produced in the air without any apparent cause: but it called on our attention by circumstances still more incomprehensible. One time among others, when M. B*** the master of the revels, with whom I had supped, and who waited on me home, was taking leave of me, the fatal cry was heard just over our heads, and almost terrified us to death. This phenomenon immediately furnished conversation for all Paris, and was recorded in the register of the police.

'After some other alarms of a similar kind, the ghost, tired of bewailing himself, meditated other pranks.

'Conversing one night with my usual visitors, the clock struck eleven, and was instantly followed by the discharge of a musquet, seemingly levelled at one of my windows; every one heard the report, and saw the flash: but no mischief was done of any kind, not even a pane broken in the window against which it was fired. Every one, however, concluded that my murder was intended. The master of the revels flew to the Lieutenant de police, who was his friend; all the neighbouring houses were searched; and the street was filled with spies; yet, notwithstanding all these precautions, the musquet was discharged against the same window during three months, without killing any one, or ever breaking the glass.

'The pains which the master of the revels took to discover the mysterious business were ill rewarded; and the ghost, by whom he was not beloved, was doubtless offended with him for alarming all Paris about the report of a musquet, which was certainly very innocent.

'One fine night, the hour was forgotten; and the window consecrated to the pranks of the ghost was opened. The master of the revels and I were leaning over the rails of a balcony:—but, when the clock struck eleven, the gun was fired, which drove us both back into the middle of the room, where we fell, and lay like dead persons. When we came to ourselves, we looked at each other, laughing, and confessed that we had each received the most violent slap on the face that had ever visited the human countenance.

'These lamentable cries, reports of musquets, and slaps on the face, were succeeded by the clapping of hands:—a noise to which the encouragement of the public had long accustomed me. After this, I heard aerial music; a celestial voice seemed to give a specimen of the air that was going to be sung. Though many heard this voice, nothing was to be seen. Accustomed to my ghost, who was a good-natured devil enough, I paid little attention to the melodious sounds that were floating in the air;—and at length all these phenomena

mena ceased, after a little more than two years' duration, when the ghost seemed to have laid himself, and to be reconciled to his tomb, which he quitted no more.

'Being informed that an elderly lady wished to see me, and having always treated age with respect, I went out of my room to receive her. An emotion, for which I could not account, made me examine her minutely from head to foot; and this emotion was much increased, when I found that she examined me with the same degree of attention. All that I could do was to beg her to sit down, and we had both occasion for support. Our silence continued, but our eyes left no doubt of the desire which we reciprocally had to break silence. She knew whom I was, but I was wholly unacquainted with her. She was sensible that it was her business to speak first, and the following conversation took place.

"I have long, Madam, eagerly wished to know you: but never going to the theatre, and having no acquaintance with persons who have the happiness of seeing you elsewhere, I was unwilling to explain my wish in writing, lest a letter, leaving you in doubt as to my motives, should meet with a refusal." After having listened, not very patiently, to a torrent of compliments on my person, talents, and celebrity,—I begged, if she had any business to disclose, that she would speak, or I must leave her.—She then informed me, that she was the best friend of Monsieur S., and the only one whom he would see during the latter years of his life. "Our whole time (said she) was employed during this period in speaking of you, sometimes as an angel, sometimes as a d——l: but we always finished by my entreating him to forget you; yet he always protested that he would love you beyond the tomb.—Your eyes, which I now see full of tears, permit me to ask why you used him so cruelly; and how, with a heart full of sensibility, you could refuse him the consolation of seeing and speaking to you once more?"——'We cannot (I answered) command our hearts. M. S. had merit, and estimable qualities: but his gloomy, revengeful, and despotic character, made me equally dread his society, his friendship, and his love. In order to render him happy, it would have been necessary that I should renounce all human intercourse, and even my talents. I was poor and proud; and I wished then, as I hope to continue to wish, to owe nothing but to my own powers and diligence. The friendship which I had conceived for him made me desirous of leading him to more tranquil and equitable sentiments: but not succeeding, and persuaded that his obstinacy proceeded less from passion than from the violence of his character, I determined to separate myself from him entirely. I refused to see him in his last moments, because such a sight would have torn my heart: I feared to shew myself too cruel in refusing what might have been asked, and should have been too miserable had I granted it. These, Madam, have been the motives of my conduct; and I hope that I shall not incur the blame of any reasonable person.'——

"To condemn you, Madam, (she replied,) would doubtless be unjust; we owe great sacrifices only to oaths, parents, and benefactors; and on this last point, I well know to whom gratitude is due. I assure you that his mind was penetrated with the obligations which he

he owed to you: but he was overcome by passion; and your last refusal hastened his dissolution. He anxiously counted every moment till his servant returned at half an hour past ten o'clock, and told him, positively, that you had determined not to come. After a short silence, he seized my hand in a fit of despair, which terrified me —— *Barbarian!* he cried —— *she shall repent of her inhumanity; I shall pursue her as constantly when dead, as when alive.* I tried to calm him, but he was no more!"

Mademoiselle Clairon was much alarmed at this threat: but, at last, recovering from her fright, she makes some pertinent reflections on apparitions. 'Who am I,' she says, 'that Nature should step out of her course to torment me? If by some apparent derangement of her laws, she should apprize us, either by her anger or benevolence, of the means of avoiding calamities and crimes, her care would be worthy of the Creator of the universe. Let us adore his providence, merit his protection, and pretend to nothing more.'

We shall terminate our extracts by the ingenuous account which Mademoiselle Clairon, in a letter to a female friend, gives of her first discovery of the diminution of her youth and beauty.

'Having arrived at my 40th year, without perceiving, myself, the least alteration in my person; and the gorgeous habiliments in which I necessarily appeared on the stage aiding, perhaps, the illusion in others; an illusion that was still fortified and sustained by the variety of characters which I had to represent, and the passions which I had to paint in theatrical perspective: my friends still thought me charming, and my lover doated on me to distraction. In short, I had not the slightest suspicion of the petty larceny which time had committed; till one day, more desirous of pleasing than usual, I was determined to heighten my charms by the most elegant articles of dress which I could possibly select; such as we always keep in reserve, in order to dazzle, surprise, and excite rapturous exclamations! Looking stedfastly at my glass to see how my hair appeared, it seemed as if my woman had been careless and inattentive to the turn of my countenance, and had placed my ornaments in such a manner as to render me less agreeable than I was accustomed to appear. However, I boldly asked for the charming cap which was sure to kill: but, in whichever way I placed it, I found that it failed of its usual effect. I threw it aside, and tried twenty others, but ineffectually; till, at length, I narrowly examined myself. With my nose in the glass, illumined by a bright day, I discovered several wrinkles in my forehead! at the two corners of my eyes! in the turn of my neck! that my teeth were not so white as formerly! that my lips were not so fresh! and that my eyes were not so bright! and, unluckily, I was in perfect health! ——— Obliged to confess that it was not the fault of my woman, nor of my caps, I burst into tears. What weakness! you will say. Alas! I had an affection for a person, on pleasing whom my whole happiness depended. The moment

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was tremendous: my affliction lasted six months; and my sufferings were the more acute, as I was obliged to try to conceal the cause. From the first moment of this cruel discovery, I determined on practising the most genuine simplicity of dress; I wished no longer to excite attention by the allurements of finery, and hoped that I should the more easily escape scrutinizing glances; since criticism and envy ought to be silent on the imperfections of those who humbly acknowlege them. I made no claims; and though I redoubled my attention to my lover, I no longer spoke the language of love, and insensibly repressed all its sensations. My conduct was observed, and a reason for it was required: when it was assigned, its ingenuousness made an impression. By this probity, I still kept possession of a heart during five years, which many women disputed, and of which the inheritance of a great fortune deprived me for ever.

'Reflect, my dear friend, on these circumstances. At 30 years of age, men have the folly to rank us among old women, and to blame *us* for pretensions which *they* dare to form at the most disgusting period of senility. This injustice deserves pity more than anger; neither take offence at it, nor be frightened into sacrifices. You must consult your vanity, your delicacy, and your reason, in order to discover what claims you still have left. You cannot dissemble that every day robs you of some attraction and some grace: but your mind, exercised by time and experience, will incline you to supply the loss of charms, by virtues which will secure to you an empire not only more mild and gentle, but certainly much more durable, than that of beauty.'

With this moral reflection, we shall take our leave of this more spirited than moral production.

Dr. B....y.

ART. VII. *Antidote au Congrès de Rastadt*, &c.; *i. e.* An Antidote to the Congress of Rastadt:—or, a Plan for a New Balance of Power in Europe. 8vo. pp. 400. London (*a pretence*) 1798.

IT has somewhere been observed by Mr. Miles, the political writer, that from an untravelled minister we cannot expect wise diplomatic politics: he has however found a minister docile to his own suggestions, if, from the praise of M. *Mallet Du Pan*, it may be inferred that this work really speaks the sense of the cabinet of London. It revives the project, once rational but now too late, of an union between Holland and Flanders, under the sway of a king of the Netherlands. Who is to execute this project? The king of Prussia, no doubt. Should he succeed, what could prevent his retaining possession of both for himself? *Partition* is, on the continent, the order of the day: no new *little* powers, mere fuel for future wars, should be created, where *great* powers are at hand to occupy and to incorporate. The most essential continental interest of Great Britain is to facilitate the extension of Prussian dominion, so

that it may abut against the frontier of France. Until then, the *northern aggrandizement* of France is not at a stand. (See Rev. vol. xxii. p. 405.)

The project suggested, at page 80, for pacification, has the radical fault of lining with *petty* states the French frontier; all which, in their turn, would have to receive first a French constitution, and then an incorporation with the republic. It is strange that the continental nations should hope to keep the French at bay, without offering to their subjects at least a British constitution; in which the elective structure of the lower house might again attract the confidence of the multitude, recover their allegiance, and renew that principle of adherence in the people at large, without which armies spend their efforts in vain. French principles have been called disorganizing: but they have produced, in the nation adopting them, an attraction of cohesion hitherto unknown; which is darting its wedgy crystals in every direction, and severing, with a resistless interstitial force, the comparatively loose and feeble organization of every contiguous state.

There are many passages in this work which are highly dangerous to the interests of Great Britain; such is the advice insinuated at page 251 to throw up the West India islands. The account given of the financial system of this country tends also to injure its credit. The recommendation to the confederated powers, to employ against France resources bortowed from French legislation, to confiscate all ecclesiastical property, and all the landed property of persons not in the politics of government, are proposals only worthy of a Jacobin in disguise. In short, no Englishman of probity and of judgment, if he had read this work with attention, would wish it to form the scale of action for his rulers.

Tay.

Art. VIII. *Tableau Historique & Politique*, &c.; *i. e.* An Historical and Political View of the Losses which the French Nation has suffered by the Revolution and the War, in its Population, its Agriculture, its Colonies, its Manufactures, and its Commerce. By Sir Francis D'Ivernois. 8vo. pp. 500. 8s. Boards. Elmsley and Bremner, &c. London. 1799.

The industrious and skilful investigations of Sir F. D'Ivernois, relative to the interior condition of France, have repeatedly attracted our approbation, if they have not overawed our acquiescence. Hitherto, he has principally been occupied with financial discussion *, but he now undertakes an estimate

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* See Rev. vol. xix. p. 515, xxi. p. 537, and xxv. p. 575.

of

of the agricultural and commercial state of that country. The telescope of his curiosity certainly discovers many curious phænomena: but it is furnished with a smoked lens, which magnifies and darkens the objects selected for its field of view. Even if no exaggeration attended the statement of the principal data, the inferences deduced from them would still be unallowable. From a diminution of prosperity, real in several respects, it is rash in the extreme to expect a speedy declension of power. History rather supports the conclusion that nations become in a military capacity the more formidable, by their neglect and abandonment of public and private luxury, of orderly industry and patient civilization. Cyrus laid waste Lydia and Syria, but founded the most powerful dynasty of Persian kings. The victories of the Romans ceased not during their poverty, but during their opulence. The wealth of Spain was less obstinate than the poverty of the Netherlands: but Holland, grown rich, became less formidable than Prussia with an inferior revenue. Lord Clive lessened by his ravages the prosperity of Hindostan, yet he promoted the lasting aggrandizement of the British empire. It is not true, then, that national prosperity is a correct measure either of the degree or duration of national power. France may be retrograde as to wealth and civilization, and yet her institutions may be attaining stability and consistence.

That the sources of French prosperity will dry up is itself problematical. What are the main elements of national wealth? Surely the wages of productive labor, and the profits of stock. The comforts of the most numerous class are every where proportioned to the retribution allowed for their toil: the journeyman is better fed, clad, sheltered and taught, the more his time is worth. Now the wages of labor have undergone, throughout France, (see p. 21,) an immense augmentation; which cannot but facilitate early marriages, the great causes of rapid population and of the purity of domestic morals. Wages have, generally speaking, doubled (p. 106): on which account, men-servants and other classes of unproductive labourers are now nearly unknown; and, as *Dupont* observes in his report, workmen are become more profuse consumers. The evidence to this point is so decisive, that our author hesitates (p. 227) whether wages have not tripled. This increase of the market-rate of labor is, in part, to be ascribed to the diminished competition resulting from military requisitions; and in part (p. 229) to the abolition of those oppressive laws which prohibited the combinations (*les ligues*) of journeymen.

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The general increase of the profits of stock is not less unequivocal. These profits, as is well known, always bear a regular relation to the average interest of money. In the higher lines of business, where much capital is employed, the profits of stock seldom exceed double interest; in the lower lines of business, where little capital is employed, they ascend to triple and quadruple interest. If therefore the average interest of money in France be seven and a half per cent. yearly, the profits of stock must be fifteen, twenty-five, and fifty per cent. This inference our author confirms by stating (p. 210) that commodities, sold retail, gain double the price which they cost wholesale:—so that every grocer and draper in France makes as large a profit on his returns, as an English druggist. This increased amount of profit is accompanied by an increased celerity and a consequent multiplication of return; for (at page 211) we learn that a great abbreviation, or rather abolition, of credit has been adopted by all orders of traders.

We assume, on the authority of private information obtained through a mercantile house at Hamburg, that the average yearly rate of interest in France, between regular and creditable merchants, is about seven and a half per cent.: this might also have been inferred from the data of our author, who says:

'Some time after the fall of *Robespierre*, a discount-bank was set up at the hotel Massiac, by means of which, several of the best houses in Paris made and received their payments. From its commencement, it discounted their paper at $\frac{1}{2}$ per cent. per month, to the amount of their shares or deposits. Since the 18th Fructidor, it has ventured to issue bank-notes.'

We learn afterward (p. 452) that this bank failed: but that another, which discounted at the rate of $\frac{1}{4}$ per cent. per month, maintains its ground. Now if six per cent. be not, and if nine per cent. be, a rate of discount profitable to a company of bankers, the natural or average rate of interest must lie between both, and amount to about $7\frac{1}{2}$ per cent. yearly.

In defiance of the direct testimony of that very trustworthy traveller Dr. *Meyer*, (see Rev. vol. xxvi. p. 499,) Sir F. D'Ivernois endeavours to prove that the agriculture of France, notwithstanding appearances, must be in a dying state. He complains that the landed properties of France are greatly (p. 26) subdivided since the Revolution, and commonly cultivated by the proprietor; circumstances unfavorable to large farms, and to the possession of abundant capital by the farmer. This, however, is also the case in China, where agriculture has attained its acmé; and, under the French system of hiring instruments of agriculture, and keeping small stocks of cattle,

(the climate rendering manure less essential,) the inconvenience of numerous petty farms is not easily proved. The profits of stock, having increased in other occupations, must also in the farming line be greater than before; and this may easily be the case without any apparent increase of the price of produce, when it is considered that tythes, excises on crops, feudal dues, and game-laws, however iniquitously abolished, have ceased to exist, and that rent is lower than ever. These important benefits are only counteracted by the suppression of the *corvées*, or parish-road-duty; which has occasioned (p. 64) a shameful neglect of the highways:—a turnpike system ought first to have been substituted. In the estimate of the neat produce of France, it has not been recollected that great part of the country is within the latitude which ripens two crops in a year on the same soil. It is on the other hand acknowleged that the dearth (p. 118) of 1794 and 1795 served as an excuse for numberless encroachments on the waste lands, which the anarchy facilitated, and which have greatly increased the mass of productive surface.—To all these causes of agricultural prosperity, the author opposes a collection of complaints from various districts, which all describe themselves as unable to pay the *contribution fonciere*, which is certainly a very moderate tax. The exposition of *Duprat* (p. 82) enumerates grievances of this kind. Be it observed that the French land-tax (or whatever it should be called) is distributed among the several departments, in the complex ratio of their populousness and wealth; and that this wealth is valued in the villages on the scale of the supposed neat produce of the land. Hence every canton or district has a perpetual interest in stating at the lowest its own populousness and produce, and in favouring a similar understatement by its neighbours. With such motives for disparagement, it is only wonderful that the official *cadastres* should not wholly have untenanted the soil, and have sterilized the legitimate surface of *Indre et Loire* into another department of the *Landes*.

On the topic of manufactures, it is observed that Lyons, Sevres, the Gobelins, and all other seats of merely luxurious art, are decaying fast (p. 191): but that Sedan, Louviers, Elbeuf, Carcassone, and Abbeville, preserve a part even of their *fine* demand; and that, by the aid of some manufactures in the conquered provinces, they are enabled to supply France sufficiently even with *coarse* cloth (*draps legers*). The city of Rouen is represented as declining: which may be true of its West India commerce, but it is not true of its manufactures;—we speak after an English traveller in that line of business. Dr. *Meyer* fully supports what we have already stated, (Rev.

vol.

vol. xxv. p. 578,) that the manufactures in all the north of France are at a stand not for want of orders, but for want of hands; a state peculiarly favourable to the profit of the conductor, to the introduction of mechanism, and to every other improvement in the arts of production. Sir F. D'IVERNOIS affects to advise the re-establishment of public admeasurements of stuffs, and of legal lengths and breadths; as if the English manufactures had not derived advantage from their latitudinarian practice in these respects.

That the holders of funded property, the owners of houses and land, and indeed all the unproductive classes of society, have been crushed—pitilessly crushed—by the French Revolution, is very true:—but to maintain that the inferior lines of industry in France are not attaining a rapidly progressive well-being, is indicative rather of a partisan than of a fair reasoner.

We agree with Sir FRANCIS in thinking it a desirable termination of the present war, that the government of France should be compelled to assume the integrity of the Constituting Assembly, and once more to decree that "France renounces all conquest." This end, however, will not be attained by any depreciating miscalculations of the resources of the republic: but by making it the interest of the numerous classes, to transfer their allegiance from their present military tyrants to some more pacific neighbour. **Tay.**

ART. IX. *Mémoires de l'Académie des Sciences*, &c.; *i. e.* Memoirs of the Academy of Sciences, for the Year 1790. Extracted from the Registers of this Academy. 4to. Paris. pp. 676. and 15 Plates. 1797.

THIS famous Academy was established in 1666 under the auspices of Louis XIV. By its labours and discoveries, during more than thirty years from its first institution, it so fully answered the intentions of its royal founder, that in 1699 he honoured it with new marks of distinction, and gave to it what may be termed a second and a more noble birth. M. *de Pontchartrain*, minister and secretary of state, with the advice and assistance of M. *l'Abbé Bignon*, his nephew, (who had been for many years president of the Academy,) formed the laws and regulations of the new constitution, which received the assent of the king. The death-warrant of the Academy was signed by the National Convention of France, in 1793.

VENIT SUMMA DIES! We must lament its dissolution;—yet the sources of consolation are abundant. It has left an edifice of such variety and grandeur, so fraught with the most exqui-

site specimens and most finished models of art, that we cannot approach it without enthusiasm, nor leave it without instruction! It is within its venerable precincts, that we must seek for the true monument of our great Newton!

We believe that within the list of the members of this Society, (honorary or otherwise,) is comprehended every man who during this century has been at all eminent for science. We must listen, then, with a large portion of academic faith, to those who represent this institution as reserved only for the partisans of rebellion and impiety; who decry its labours, and depreciate its usefulness, by representing it as a royal institution, yet continually plotting the downfall of royalty; as an institution which, although formed by the care and endowed by the munificence of a king styling himself Most Christian, yet propagated with an unceasing and sabbath-less diligence the most pernicious doctrines of Atheism.—Offended bigotry, or frustrated ambition, is regardless of discrimination, and extravagant in its anger:

"Nor *truth* nor reason makes it at a stay." *

It puts into one sweeping clause of Ban and Anathema, the immediate authors of offence, and those who have been instrumental to it remotely, indirectly, and inadvertently.

In times of turbulence and horror, we should not wonder if science and the mild studies of humanity quitted a people, as having no longer any business or cultivation among them; yet the Academy has not ceased to exist solely by the circumstance of times of horror having come on the people of France, but because it was a royal institution, and royalty had been overthrown: for, by the very edict of its destruction, the establishment of another institution, under the title of the *National Institute*, was declared.

The contents of the present volume are memoirs printed for the year 1790† since the month of July 1794, but not exposed to sale, on account of the depreciation of paper money. Its form, and the distribution of its parts, are altered from those of the preceding volumes. The historical part, the reports, the programmas, &c. are omitted: which omission is to be attributed to the avocations of the Secretary, *Condorcet*, when deputy to the National Convention, and who perished miserably in 1794. It is proposed to print a separate volume for the *Eloges*, which will relate to *Franklin*, *Tillet*, *Le Gentil*,

* Altered, slightly, from Dryden.

† The last volume which we noticed was that for 1788: see Rev. vol. viii. N. S. p. 507. The volume for 1789 we have not been able to procure.

Charles,

Charles, *Fourcroy* (the Engineer), *Rochefoucault*, *Bonnet*, *Diétrich*, *Bailly*, *Lavoisier*, *Malesherbes*, *Saron*, *Vicq d'Azyr*, *Condorcet*, *Du Sejour*, *Petit*, *Perronnet*, *Demours*, and *d'Agelet*. This series of Eloges will terminate the important collection of the Memoirs of the Academy, comprehended in 139 volumes; viz.

Vols. 92 from 1699 to 1790; the year 1772 containing two.
11 from the foundation of the Academy in 1666, until its renewal in 1699.
11 of Memoirs presented to the Academy.
9 of Prizes.
9 of Tables, to 1780.
7 of Machines (drawings of).

A preliminary advertisement to this volume, from which these particulars are extracted, is signed La Lande.—We come now to the Memoirs.

Concerning the Situation, on the Terrestrial Globe, of the principal Ports on the Coast of the Arsacides *in the South-Sea, to the East of New Guinea.* By Pierre le Monnier.

In assigning the longitude to the coasts of New Holland, the makers of charts have been in much uncertainty, with respect to so great a quantity as 4 degrees of longitude.

The author of the present memoir thinks that there are now sufficient means for removing these doubts, to be obtained from the superior construction of time-pieces, and the perfected theories of the trade-winds and sea currents.

Experiments and Observations on the Effect which results from a Combination of one Part of Pewter, with 24 *Parts of fine or allayed Gold; when the Ingot, combined of the Pewter and Gold, and reduced to a Plate, is annealed.* By Matthieu Tillet.

In the *Journal de Physique* for the month of September 1788, was a memoir intitled, "Experiments and Observations on the Manner of melting Gold and Pewter;" in which the reporter controverted the opinion of those metallurgists, who maintain that pewter mixed with gold in the smallest quantity, whether in substance or vapour, entirely destroys the ductility of that metal. The reporter adduced the authority of Mr. Alchorne, assayer in the Tower of London, who published a paper in the Philosophical Transactions to prove that pewter may be mixed with gold in moderate quantities, without producing any bad effects. An abstract is given of the Experiments and Observations of Mr. A.; who is of opinion that gold, melted with pewter in the proportion of one part to 24 parts of gold, forms an alloy which preserves a sufficient ductility to be beaten, reduced into a plate of the thickness of stout paper, to be employed in the manufacture of trinkets, and to be drawn into a fine wire.

The author of the present memoir, being of opinion that pewter mixed with gold rendered it so brittle as to be unfit to be drawn into wire, or beaten into thin plates, &c. repeated the experiments of Mr. Alchorne; these he relates; and he concludes from them that gold, whether fine or alloyed, combined with a small part of the most pure pewter, by melting them thoroughly together, acquires stiffness and hardness; and although, with careful management, it may be beaten out under the hammer, yet, not being able to bear the annealing without the danger of breaking, it is deprived of the essential advantage of being capable of restoration to that state of suppleness which is natural to it. M. TILLET, therefore, consulting the interests of artists, thinks it his duty to restore to them their former doubts on the mixture of gold and pewter. He is moreover of opinion that jewellers, and those who make trinkets, would *find their account* in having their gold refined, previously to the working of it; as they would save an expence of time and labour, which the cautious management of gold mixed with pewter requires.

Memoir on the Disappearance of Saturn's Ring, in 1789 *and* 1790. *By* JEROME LA LANDE.

M. LA LANDE here explains how the position of the sun and moon produced the four phænomena of Saturn's Ring in 1789 and 1790; he likewise enumerates all the observations made by different astronomers, respecting the phænomenon of the disappearance of the Ring, the circumstances under which they were made, and with what agreement. He thinks that the method given by him for ascertaining the phases of the Ring is more simple than that of M. *du Séjour*, who has treated the subject analytically in his *Essai sur les Phenomenes*, and in his *Traité Analytique* of the apparent motions.

Memoir on the Flux and Reflux of the Sea. By PIERRE SIMON LA PLACE.

The true cause of the tides was first assigned by Newton, in his *Principia*. He found that the same law of attraction, which solved the other phænomena of the system, might be applied to this with equal success. The deductions, however, of this great philosopher, concerning the tides, not being sufficiently full and particular, the Paris Academy proposed, as the subject of its prize dissertation for the year 1740, "The Flux and Reflux of the Sea." The prize was shared by *Euler*, *D. Bernouilli*, and *Maclaurin*; who, in three masterly and celebrated treatises, developed the Newtonian theory:—but the question had not been considered, even by these mathematicians, in all its generality. Consulting facility, they had adopted an hypothesis similar to that of Newton concerning the equilibrium

brium of the sea; which they supposed every instant to be in equilibrio under the action of the heavenly bodies; whereas, the rapid rotatory motion of the earth prevents the water at its surface from assuming, at every instant, the figure which results from the operating forces. In comparing the results from theory with actual observation, a great want of coincidence was manifested in the difference of two tides in the same day; which was observed to be in fact very small, but by theory appeared to be considerable.

The deficiency of their theories was perceived and acknowleged by the authors themselves; and in order to supply it, neither analysis nor the science of the movement of fluids offered adequate resources. The first researches, which were to conduct to a more perfect theory of the tides, were made by *D'Alembert*, in his "*Reflexions sur la Cause des Vents;*" in which he considers the oscillations of a fluid covering a planet placed under the action of an attracting body. Afterward, the discoveries of this great geometrician in the doctrine of fluids, and in analysis, afforded ampler means of considering the subject of the tides under a more general point of view. He introduced a new branch of analysis, called *Calcul aux différences partielles*; a calculation which must necessarily be made, when into the conditions of the problem all the elements which influence the phænomena of the tides are made to enter. From the time of the first invention of this calculus, its inventor, *Euler*, and *La Grange*, have continually and greatly contributed to its perfection.

M. DE LA PLACE, availing himself of the great improvements which had been made in the doctrine of fluids and in pure analysis, since the time of the publication of the treatises of *Euler*, *Bernouilli*, and *Maclaurin*, resumed in the Memoirs of the Academy for 1775 and 1776 the problem of the tides. His hypothesis was simply this; that the spheroid (mentioned in the problem) differs very little from a sphere; that the fluid covering it is of a very small depth, relatively to the radius of the solid; that the spheroid has an uniform rotatory motion round a constant axis; and the centrifugal force thence resulting, for all the parts of a fluid, is very small with respect to the force of gravity;—finally, that these parts obey other forces, such as the attraction of the several heavenly bodies: —which forces, however, are inconsiderable with respect to the force of gravity. The motion of the bodies, likewise, is supposed to be much slower than the rotatory one of the spheroid.—M. DE LA PLACE, by thus establishing his theory on an hypothesis more conformable to real circumstances, was enabled not only to solve the ordinary phænomena, but to assign

the true reason of that almost exact equality which exists between the tides of the same day.

In the present memoir, the theory of the oscillations of the ocean is resumed; and its correspondence with actual observation is more particularly considered. The author remarks that

'To ascertain the proximity of such a correspondence, it was necessary to have a collection of a great number of observations made with care, during a period of many years, in a port where the phænomena of the tides are very sensible, regular, and liable to be affected by the winds only in a small degree. Of this kind, the most extensive collection is that of observations made at Brest, at the commencement of this century; which M. *Cassini* found among the papers of his grandfather, and which M. *de la Lande* published in the 4th volume of the 2d edition of his Astronomy. Of these observations I have made use; and from their examination, so striking a regularity (regard being had to all the causes capable of interrupting it) manifests itself, that I do not hesitate to point out the port of Brest as one of the most favourable for observations on the tides, if made with attention equal to that which has been devoted to the determination of the other phænomena of the system. This port is probably indebted, for the advantage which I have mentioned, to the circumstances of its advanced position in the sea, and of the narrow entrance of its road compared with the breadth; hence the irregular oscillations of the waters of the sea are much diminished. *Jacques Cassini* only gave, in our memoirs, the consequences which he deduced from the observations of which I have spoken; and on this occasion a very important remark forces itself on our notice, concerning the necessity of publishing the original observations made on any phænomenon; since it frequently happens that the best established theory of phænomena renders those observations interesting, which had formerly been neglected because they appeared to be of small importance. The truth of this remark has been suggested to me and exemplified in my researches. The above mentioned collection of observations does not contain any relative to the law which regulates the ascent and descent of the waters of Brest; a defect which I have supplied by accurately detailed observations made in that port at my request.

'In observations of this kind, where a thousand accidental causes may intervene, and obstruct the regular course of nature, it becomes necessary to consider a great number of them at once; in order that, adventitious causes balancing each other in their effects, the mean results may exhibit only regular or constant phænomena. It is moreover requisite, by an advantageous combination of observations, to groupe the phænomena which we are desirous of determining, and to separate them, that they may be distinguished with greater facility and exactness. Such a method I have pursued; and a departure from it exposes us to the danger of mistaking, as a law of nature, the effect of an accidental cause. For instance; *Jacques Cassini* concluded, from the comparison of some isolated observations, that the greatest

greatest tides of Syzigies happened, *cæteris paribus*, in the equinoxes. M. *de la Lande*, acting on a plan of a similar principle, obtained a contrary result.—In the course of this memoir, it will appear that the results of a great number of observations place the fact beyond all doubt, that the greatest tides in Syzigies and the least tides in Quadratures happen in the Equinoxes; and that the declinations of the sun and moon have a very sensible influence on the height and interval of the tides.'

M. DE LA PLACE then proceeds to give the summary of the results to which he has attained in the present memoir. He first considers the most simple case of the problem; the sun acting solely on the waters, and moving in the plane of the equator. Here the result would be the ocean in the same state at every interval of 12 hours, and a flux and reflux in the space of half a day. It is likewise shewn in what manner the law of the ascent and descent may be determined, and for what cause the diminution of the tide in ports varies a little from this law:—moreover, that the more extensive and shallow a sea is, the more sensible are the phænomena of the tides.

The author next estimates the action of the moon, and points out the remarkable phænomena which arise from the combined action of the sun and moon. For instance; the whole tide at its maximum; which happens when the full lunar tide coincides with the full solar tide in Syzigies, the actions of the sun and moon then co-operating: again; the whole tide at its minimum, the high lunar tide coinciding with the low solar tide, which happens in Quadratures.

In the latter part of the summary, the motions and the distances of the centre of the earth from the sun and moon are made to vary. In this case, by developing the expressions for their actions on the sea, the different terms may represent the actions of the same number of bodies, moving uniformly at constant distances from the earth; whence it will be easy to determine the flux and reflux of the sea, corresponding to the inequality of the motions and the distances of the sun and moon. If the phænomena of the tides be thus submitted to analysis, it will appear that the tides produced by these two heavenly bodies increase in the inverse ratio of the cubes of the distances; *cæteris paribus*, then, the tides ought to increase in the perigee of the moon, and diminish in its apogee. This phænomenon is remarkable at Brest. It appears, by a comparison of observations, that one minute of variation in the semidiameter of the moon corresponds to 2 ft. 8 of variation in the whole tide; and observation is in this instance so conformable to theory, that it is possible by these means to deter-

mine the law of the action of the moon on the sea relatively to its distance.

The last case is that in which the author makes the sun and moon to move not in the plane of the equator, but as they really do in nature; and from their declinations, he says, new phænomena will appear, which, compared with theory, give additional confirmation to his system.

At the conclusion of his summary, M. DE LA PLACE adds,

'Hence appears the accordance of the theory founded on the law of gravitation, with the phænomena of the heights and intervals of the tides. Many of these phænomena have been first pointed out by the theory, and afterwards confirmed by observation; others, known to me by observation, and which did not appear to have any possible dependance on the theory, have resulted from that theory when more thoroughly examined. In general, all the results from theory, abstracting from local circumstances, have been confirmed by observation; and when local circumstances have modified the results from theory, then, by attending to these circumstances and estimating their effects, the same agreement has appeared. More numerous, more exact, and more detailed observations than those already made, adding farther confirmation to the theory, may moreover determine the small partial tides which depend on the fourth power of the lunar parallax, and on other quantities neglected in the calculation. We are therefore as much interested in devoting attention to the tides, as to the other phænomena of the system. It will be sufficient to observe, every year, the instant of time, and the heights of the low and high tides, in the two syzigies, and in the two following quadratures which comprehend each equinox and solstice. The observation of the altitudes of the tides is attended with no difficulty: but that of the instants of time for the high and low tide is not so easy. It may however be determined with precision, by taking a mean between the two instants when the sea is at the same height, a quarter of an hour nearly before and after the high or low tide. A long series of observations of this kind, compared with the corresponding positions of the sun and moon, will rectify the elements obtained by me in this work; will fix those which are as yet uncertain; and will explain those phænomena which are yet involved in the errors of observations.'

M. DE LA PLACE then proceeds to the analytical part, resuming the formulæ previously demonstrated in the volumes for 1775 and 1776.

In the course of the memoir are inserted nine tables.

The solution of this important and difficult problem *(le plus épineux de toute la mechanique céleste)* reflects becoming lustre and dignity on the last labours of the academy.

Experiments concerning Seed-Wheat. By HENRY ALEXANDER TESSIER.

These

These experiments were instituted for the purpose of ascertaining the two following questions: Is it always necessary to sow the seed of the last harvest? Is it necessary frequently to renew the seed; that is, to take it from another district or country?—If the usage of farmers be of weight, the question is already decided; for they almost invariably sow the seed of the last harvest only, and change the seed every two or three years. The experiments of M. TESSIER were made with a variety of seeds of different ages, and tend to controvert the common opinion. Respecting the first question, he concludes from his experiments that ripe wheat is capable of preserving its germinative virtue, when not destroyed by animals or fermentation; and that the seed of the last harvest but one, better care being taken of it than of older seed, is very proper to be used. If, however, the cultivator be apprehensive that the grain has suffered any injury from insects or fermentation, he ought, previously to seed-time, to try experiments with a certain number of grains.

The advantages resulting from the establishment of the fact, that seed loses not its germinative virtue by keeping, will appear in these cases; first, When the grain of the last harvest has suffered by rottenness. 2dly, When the hail has injured the fields * of the farmer, so that his only resource is in the seed contained in his granaries. 3dly, When a retarded harvest (as it happens in some mountainous parts) approaches too nearly to the seed-time. 4thly, When the seed of the new harvest is of a quality superior to that of the preceding one; it being then the interest of the farmer, and of the public, that the wheat of the preceding year should be used as seed.

With regard to the second question; the author thinks, from the experiments of ten years, that he may venture to affirm that, within such a space of time, it is not necessary to renew the seed-wheat; and that it does not suffer a diminution of its qualities so speedily as some have supposed.

Memoir on the particular Integrals of differential Equations. *By* ADRIEN MARIE LE GENDRE.

In a memoir presented to the Academy in 1734 by M. *Clairaut*, and proposing to give the solutions of "problems in which it is required to find curves of which the property consists in a certain relation between their branches, expressed by an equation," the author, observing the nature of the analytical process, made the following singular remark; "that there are

* This frequently happens in some of the southern provinces of France.

differential

differential equations capable of admitting two solutions, different from one another, of which one requires not the aid of the integral calculus; of such kind are the differential equations

$xdydx - dy^2 = ydx^2 - dydx$ * which the equations $4y = x^2 + 2x + 1$ and $2ax - 2x = -4y + 1 - aa$ equally satisfy, and $ady^2 + xdy^2 - ydydx = xdxdy - ydx^2$ which the equations $\frac{x}{\sqrt{y}} - \sqrt{y} = \sqrt{4a}$ and $bby - 2bx + 2by = -4a$ equally satisfy."

M. *Euler*, in a memoir entitled "*Exposition de quelques paradoxes dans le calcul intégral*," presented to the Academy and published in 1756, considered more particularly the nature of these differential equations which admitted of two integrations; placed them in a clearer point of view; and illustrated his reasoning by many examples drawn from geometry: but neither had this author at that time, nor had M. *Clairaut*, investigated the method of determining *à priori* whether a false equation, which satisfies a given differential equation, is comprised or not in the complete integral of this differential equation, without previously knowing this integral.

This was, however, afterward effected by *Euler* in the first volume of his *Calcul Intégral*. A more general and rigorous solution of the problem was exhibited by *D'Alembert* in the Paris Acts for the year 1769. M. *de la Place*, in a memoir for the year 1772, extended and perfected the theory of particular solutions; and, which had never been done before, he gave methods for finding directly all the particular solutions which could satisfy a given differential equation; and which should not be comprised in the general solution of the equation. Finally, a new and complete theory of this branch of analysis was exhibited by M. *La Grange*, in the Memoirs of Berlin for 1774.

In the present memoir, the subject of the particular integrations of differential equations is resumed by M. Le Gendre; who proposes to demonstrate a new principle, from which, says he, 'results a method more direct than those already given, for distinguishing the particular integrals from those which are only incomplete; and for deducing the former immediately from the proposed differential equation.' His principle is that 'the particular integrals are always comprised in a finite equation, where the number of arbitrary constant quantities is less

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* This equation, by the fluxionary notation, is $xx'\dot{y} - \dot{y}^2 = y\dot{x}'^2 - y\dot{x}$.

than

than in the complete integral.' He acknowleges that his principle, and its demonstration, are consequences very easy to be deduced from the theory of M. *La Grange*.—At the end of the memoir, a new solution of the tautochronous curve is given.

Remarks on the Muscles situated at the Forepart of the Neck. By RAPHAEL BIENVENU SABATIER.

In the enumeration and description of muscles, M. SABATIER was the first who adopted the excellent method of Albinus, although this method was known in 1734. Albinus divides the body into 48 parts. M. SABATIER divides it into 28 only, for reasons set forth in his treatise on anatomy. In the twentieth division, are comprised those muscles which are situated in the forepart of the neck: but this division does not contain all the muscles which are in the corresponding division of Albinus. The consideration of the muscles of the 20th division is resumed by M. SABATIER, and treated in this memoir with greater nicety and exactness than in his treasise before mentioned.

Observations on the right Muscles of the Belly. By the same.

The changes observed in the muscles of the belly, by Albinus and Dupuy, are here confirmed by the observations of the present writer.

Second Memoir on the Hail Storm, which happened on Sunday, July 13th 1788. By M. M. LE ROI, BUACHE, and TESSIER.

In the volume for the preceding year, a report was made on this storm, which traversed France, part of Flanders, and of Holland, a space of 200 leagues, in eight hours. The present memoir, in pursuance of an order of the Academy to inquire particularly into the circumstances of the event, contains an exact and detailed account of the direction, the ravages, and the duration of the tempest, and of the loss which France sustained by it.—The storm passed in the direction of two parallel *bands* *. The one commenced on the coast of Aulnis, traversed Poitou, Tourraine, the province of Orleans, Isle de France, Picardy, French Flanders, and penetrated into Austrian Flanders, Zealand, and Holland. The other, commencing in Saintonge, traversed the same provinces as the first, and those parts of Brabant and Holland which were in the same line with it.

The mean distance between the *bands* was five leagues and a quarter. The whole length of one was 165 leagues; and that of the other, 200 leagues. The direction of the storm was

* The French word is *bandes*, which is not easily translated: the idea meant to be conveyed may be best conceived perhaps by the word *strip*, or *stripe*.

from south-west to north-east. It was everywhere preceded by such darkness, that, although the day was advanced, it was impossible to write or read without a light. In seven hours, it traversed all the parts of France which suffered by it; the velocity of the wind being $16\frac{1}{2}$ leagues, or $49\frac{1}{2}$ miles, in an hour.

The hail-stones were irregular in their form; some being round, others long and pointed; the largest weighed one-half pound at most.—The duration of the fall of hail in each place did not exceed eight minutes.—No human being was killed by the hail-stones, but many animals were destroyed or maimed; buildings were overthrown; trees were rooted up, or stripped of their branches; grain and vines were destroyed, &c.—The known loss to France was 24,962,093 livres.

Observations on the first Comet of 1790, *discovered in England by Miss* Herschel; *observed at Paris, from the Marine Observatory, the* 19*th and* 20*th January.* By CHARLES MESSIER.

This comet was discovered at Slough, near Windsor, on the 7th January, and information of it was communicated by Dr. Herschel to the French astronomers; who began to observe it from the 18th January. In the present memoir are given two Systems of Elements, calculated by the President of Saron. The second has been already published in the *Connoissance des Temps* for 1792, p. 354.

Observations on the second Comet of 1790, *discovered at Paris by* P. F. A. Méchain, *January* 9*th*; *observed at the Marine Observatory from the* 11*th to the* 21*st of the same Month.* By the Same.

This is the sixty-third comet of the system, of which the orbit is calculated. Two tables are given in this memoir; 1st, Of its apparent positions; 2d, Of the right ascensions and declinations of the stars with which the comet of 1790 has been compared; their positions being reduced to the time of the observations.

Observations on the third Comet of 1790, *discovered in England by Miss* Herschel, *on the Morning of April* 17, *observed at Paris from the Marine Observatory from the* 1*st of May to the* 29*th of July.* By the Same.

Observations of Eight Thousand Northern Stars, made at the Military School, with a Mural Quadrant of the Radius of $7\frac{1}{2}$ *Feet.* By JEROME DE LA LANDE.

These papers require no particular remark.

Memoir on the Algebraical Relation between the true and mean Anomaly. By A. P. DIONIS DU SÉJOUR.

When

When the true anomaly is given, the mean anomaly may easily be found: but, when the mean anomaly is given, it is not so easy to determine the true; since it is necessary to resolve an equation which involves an arc and the sine of that arc.—To facilitate the solution of the problem, a series is used which expresses, by a very near approximation, the true anomaly, when the mean is given:—but, although this determination is sufficiently exact for astronomical purposes, since the eccentricities of the orbits of the planets are very small, yet, in strictness of geometrical language, the solution is not rigorous. M. DU SÉJOUR, therefore, proposes in this memoir to shew that there exists a simple and rigorous equation between the true and mean anomaly; and of such a nature that, the time being given, the true anomaly may be expeditiously determined.

Observation of the Passage of Mercury over the Sun's Disk, 5th November 1789; *made at the Marine Observatory.* By CHARLES MESSIER.

This memoir contains some farther observations on the spots on the sun.

Memoir containing, 1*st, Observations of four Epochs of the Disappearances and Reappearances of the Handles of Saturn's Ring, (anses de l'anneau,) in* 1789 *and* 1790.—2*dly, Observations on various luminous Points, frequently seen on the Handles of the Ring, and on the Shadow of the Ring projected on Saturn's Disk.*—3*dly, Observations of three Oppositions of Saturn to the Sun in* 1788, 1789, *and* 1790, *made for the Purpose of determining the Place of that Planet.*—4*thly, A Chart of the apparent Path of Saturn, which represents the four Observations of the Disappearances and Reappearanees of the Handles of the Ring.* By CHARLES MESSIER.

These observations were made at the Marine Observatory at Paris. They suggest no particular remark:—nor does the following:—

Observation of the total Eclipse of the Moon in the Night of the 22*d and* 23*d of October* 1790, *made at the Marine Observatory of Paris.* By the Same.

Memoir on the Friction of the Points of Pivots. By CHARLES AUGUSTIN COULOMB.

The author of this memoir published, in the 9th volume of the *Savans Etrangers*, an Essay on the Friction which the Points of Pivots and their Caps experience: but the experiments there adduced being neither sufficiently numerous, nor made with satisfactory precision, the theory of friction could not receive

ceive all its desirable extent and certainty. The subject of the former essay is resumed in the present; which, the author is of opinion, will be a proper continuation of his paper on the friction of machines, printed in the 10th volume of the *Savans Etrangers*.

In suspending the magnetic needle, and bodies which are to turn on the point of a pivot, the ordinary custom is by means of an agate cap, or a cap of some very hard substance. The pivots are of tempered steel; and most frequently the steel is of the same temper which is given to elastic springs. The form of the hollow part of the cap is conical, with a termination in the form of a cup, of which the radius of curvature is exceedingly small. The point of the conical pivot, on which the cap is supported, forms at its summit a small convex surface, with a radius of curvature still less than that of the bottom of the cap. Yet, whatever are the pains taken by the artist, the curvature of the bottom of the cap is always extremely irregular; and the friction of the agate cap, turning on the point of the pivot, is often five or six times more considerable than the momentum of the friction of a plane of a highly polished agate, turning round on the same pivot.

The determination of the dependence of the quantity of friction on the form of the pivot, &c. by combining calculation and experiment, is the principal object of the present memoir. The results obtained by the author are thus recapitulated:

The friction of the pivots is independent of the velocities, and is as a function of the pressure.

The friction of granate is less than that of agate; and that of the latter is less than the friction of glass.

The figure of the point of the pivot, according to its degree of angularity, influences the quantity of friction; so that, when a body weighing more than 5 or 6 drachms has been whirled on the point of a needle, the most advantageous angle for this point has appeared to be from 30 to 45 degrees; when the body weighs less, the angle may be diminished without a sensible augmentation of the friction; and the angle of the point (if the steel be good) may even be reduced to 10 or 12 degrees, if the weight imposed exceeds not 100 grains.

In the determination of the law of the friction of pivots under different degrees of pressure, it appears that, for a pivot of the best tempered steel, (annealed to the first degree of spring-temper,) the point terminating under an angle of 45°, the momentum of the friction is as the $\frac{4}{3}$th power of the pressure.

All the caps, which could be procured from the best workmen, appeared to have much irregularity in their concavity. The momentum of their friction, under the pressure of 5 or 6 drachms

drachms and more, is sometimes triple or quadruple of that of a highly polished plane made of the same materials as the caps. Finally, in order to sustain these caps, it is necessary that the point of the pivots should terminate under a less angle than is requisite in sustaining a plane.

*Memoir respecting a Journey made to the War-Ports of the Ocean, for the Purpose of establishing Conductors * there, and of placing them on Ships.* By JEAN BAPTISTE LEROY.

In the autumn of 1784, in pursuance of an order from the minister of marine, M. LEROY repaired to Brest, for the purpose of defending the magazines, principal buildings, &c. from the effects of lightning, by means of conductors. After having constructed and erected his conductors, he turned his attention to another object, not less important than the first, viz. that of defending *ships* from lightning, by an instrument similar in principle to that of the one used in buildings. In the construction of these conductors, some difficulty at first occurred; since it must necessarily be so placed and formed, as not to obstruct in the smallest degree the service of the ship and the manœuvres, yet at the same time must have all the flexibility necessary to accommodate itself to the different motions of the cordage on which it is placed. The first conductor fixed on board a ship failed, having been shattered in a tempest. The construction was then altered, and with success; since the conductors have remained entire during storms, and have (according to the opinion of the commanders) preserved the vessels in which they were placed from lightning.

Besides his visit to Brest, M. LEROY repaired to Port l'Orient and Rochefort, where also he caused conductors to be erected. Farther observations occur in a subsequent memoir, which we shall mention in its place.

Memoir on the Interior of Africa. By JEROME LA LANDE.

M. DE LA LANDE has been urged to publish this memoir by the same ardent and honourable spirit of curiosity, which has in England given rise to a society †, from which much practical good and useful knowlege may reasonably be expected to result.

The advances, however, hitherto made towards a knowlege of the Interior of Africa, are inconsiderable. The communications of the two missionaries, Mr. Ledyard and Mr. Lucas, contain indeed some interesting information: but there are at

* The French term, *Paratonnèrre*, is a better name for these instruments than conductor.

† The Association for promoting the Discovery of the Interior Parts of Africa.

present

present 800 leagues from the river Senegal to the Nile, on which scarcely an European has trodden, and of which our knowlege is extremely imperfect *,

The present memoir is divided into two parts. In the first, the author endeavours to prove that the course of the Niger or Senegal is from the eastern parts of Africa to the western; in the second, he treats of the Interior of Africa, and points out the means of exploring it, and even of traversing it from the mouth of the Senegal to the Red Sea.

We must forbear, on account of want of room, to quote the various and important authorities adduced by M. DE LA LANDE in support of his opinion. What he has done will no doubt answer the end proposed by him, viz. that of exciting curiosity and the spirit of enterprise, by shewing how much is to be known, and by what means it may be attained. His labours will also be useful to those of our own countrymen, who are already engaged in inquiries concerning the Interior Parts of Africa.

Memoir on the Necessity and Means of arming Buildings with Conductors, to preserve them from Lightning. By J. B. LEROY.

On the subject of conductors much has been written: some authors prefer the knobb'd; others, those which are pointed. The prevalent practice in England is in favour of the latter kind: but still the subject is clouded with many doubts; and in fact it must necessarily be so, since the theory of lightning, &c. is by no means clearly and satisfactorily established. When a Leyden phial is charged, the inside is said to be in a positive state, the outside in a negative; the former has a superabundance of electric fluid, the latter a deficiency.

Analagous to this case, it is contended, is that of the air, earth, &c. in a thunder storm; an electric cloud answers to the inside coating of the Leyden phial, the earth to the outside; the cloud is in a *positive* state, the earth in a negative,—or contrariwise; and when a discharge takes place, the equilibrium between the cloud and the earth is restored. Without adducing arguments and facts, however, and many may be brought against this theory, a much more obvious and reasonable analogy offers itself, in making two different clouds answer to the two surfaces of the electrical jar, and the earth to operate simply as a conductor between these two clouds, when in the relative states of superabundance and deficiency. The excellence of the construction of a conductor must then depend on the truth of one or another of these theories. If the latter theory be true, if

* The work of Mr. Park, however, which has been just published, but which we have not yet had time to read, will probably afford much curious and important information on this subject.

the

the earth acts merely as a conductor, then a pointed conductor erected at the gable end of a house, or elsewhere, can be of small use; or, it may even be the cause of destruction to the building which it was meant to protect: for the conductor, elevating itself towards a charged cloud, by rendering the communication between the two clouds sufficiently complete, may invite the stroke which would otherwise not have taken place, or perhaps have gone by a different route.

The author of the present memoir gives directions for the construction of his *paratonnèrres*, or pointed conductors: but their construction does not differ essentially from that of conductors usually erected in England. According to his own confession, buildings have been struck by lightning even when armed by these conductors; a fact in our minds by no means remarkable, but a strong argument against the utility which they are intended to promote, and the truth of the system on which they are constructed.

Application of the Circle to observe the Meridian Altitudes of Stars. By JEAN DOMINIQUE CASSINI.

In this short memoir, we find mention of the observations which were first made by means of the entire circle, introduced as an astronomical instrument, by *Borda;* and which was remarkable for its precision and exactness. M. *de la Lande* has described this instrument in his *Connoissance des Temps* for 1798.

Observations of Stars, made at the Military School, with a Mural Quadrant of seven Feet and Half; in 1784 *and* 1785. By JOSEPH LEPAUTE D'AGELET.

An account of the labours of this young astronomer is published in the *Journal des Savans* for 1791; and also, with additions, in the *Connoissance* for 1798. He left France in 1785 with M. *de la Pérouse*, and shared the fate of that celebrated and lamented navigator.

Some papers on Chemistry, and on other subjects, remain to be noticed: but these we must defer to another opportunity.

[*To be continued.*]

Wood....e.

ART. X. *Abrégé des Mémoires*, &c.; *i. e.* An Abridgment of the Memoirs illustrative of the History of Jacobinism, by the Abbé BARRUEL. 8vo. pp. 500. 6s. sewed. Dulau and Co. London. 1798.

THIS abridgment is far less exceptionable than the original work, and forms a very convenient compendium of its facts and principles. It is divided into six parts.

The first part analyzes the anti-christian conspiracy of the French philosophers; a conspiracy, as we have already ob-

served, completely established; and which, as we conceive, is likely yet to succeed in all catholic countries, where the public religion has certainly not those characters which adapt it for credibility in an age of information. We should expect that it will be least successful in Denmark, where the magistrate has withdrawn the national act of uniformity; and where the public religion has nearly found that level, to which Christianity tends in the present state of literary inquiry.

The second part examines the supposed conspiracy of the sophists of rebellion against kings. When a rebellion is already undertaken under a royal form of government, it very naturally adopts a speculative hostility to monarchy, as a mean of strength. Traces, therefore, of this *à posteriori* enmity are to be found in the recent writers of the French:—but of a previously concerted plan for the abolition of monarchy, we still look in vain for the symptoms. The writings of *Rousseau* alone, and he was kept aloof by the other philosophers of France from their combination-rooms, tended decisively that way. The private correspondence of *D'Alembert* offers evidence indeed of his individual republicanism: but, as he did not publish these opinions, they do not evince the system of the party. *Beaumelle* is not named by the Abbé.

The death-bed penitence of the anti-christian philosophers, which rests, we believe, on very satisfactory evidence, should have been narrated in the first chapter; for they are not stated to have repented of republicanism, but of atheism.

Part III. enters on the general spirit and tendency of the powerful and diffusive sect of free-masons. We have already given our reasons for believing (vol. xxv. p. 307) that the opinions of the free-masons were rather a consequence than a cause of the national spirit of *France*; and were neither essentially nor systematically directed to revolutionary ends. In addition to the arguments already adduced, be it observed that, out of two hundred songs of the free-masons, collected in *Van Laak's Lire Maçonne*, and accompanied for the use of the fraternity with the usual tunes, not above four contain any sentiments which could be perverted by the sophists of tyranny into invitations to sedition. If any of the poets invoke the muse Eleutheria, it is Monsieur *de Vignoles*.

The story of the mimic assassination, copied from *Montjoye*'s Romance, is here repeated (p. 161) with unabated confidence. The derivation of the Masons from the Templars, and not from the Rosicrucians, is also still maintained: although the introduction of a degree of Knights Templars appears to be long posterior to the institution of the Masonic order. They are also derived (p. 187) from the Albigenses; as if it were necessary to fling every schism into the cauldron whence this

quin-

quintessential heresy is to be distilled. Ramsay's *Masonry Dissected*, 1731, gives the first hint of occult lodges; which had probably in view the restoration of the Stuarts.

The fourth part relates to Illuminism, of which we have spoken enough, vol. xxvii. p. 512. Secret societies are not likely to flourish much under any government which tolerates and courts publicity. The celebrated *Herder* probably alludes to this association in the second volume of his Letters on Humanization, (p. 143,) where he so beautifully sketches the idea of a perfect sect.

The fifth part continues the same subject. The map of the provincial distribution of the lodges recalls to mind the interior government of the English Anabaptists.

Part VI. contains the ridiculously unsuccessful attempt of the Abbé, to attribute the enormities of the Parisian proscribers to the Illuminés of Germany.

Extracts cannot be necessary from a book which is itself all extract from volumes already noticed in detail. The work has gained in neatness of arrangement; and it retains those brilliant and eloquent passages which so agreeably relieve the reader.

Tay.

ART. XI. *Annales de Chimie*; i. e. Chemical Annals, by Citizens GUYTON, MONGE, BERTHOLLET, FOURCROY, ADET, HASENFRATZ, &c. &c. 8vo. Paris. 1798, 1799.

ACCORDING to the promise in our last Appendix, we now again pay our respects to this very important work. We begin at No. 67, or Vol. XXIII, and shall pursue the Number as far down as they have yet reached us: noticing, in our usual manner, the more important original papers:—but the XXIIId volume seems to be less rich than any of the succeeding in articles of this description.

Account of an Instrument proper for measuring the Bulk of Bodies, without plunging them into any Liquid. By M. H. SAY.

This paper requires the accompanying plate, in order to be properly understood.

Analysis of the Earth from the Pulo of Molfette in Apulia. By M. PELLETIER.

This earth contains above 40 parts of nitrat of potash in one hundred.

Some notes by the Abbé FORTIS, on this natural nitre-bed, shew how miserably so rare a treasure was managed under the old Neapolitan government.

Extract from two Memoirs on Cork. By B. DE LA GRANGE.

It appears from this paper that the acid of cork differs, in the proportion of its principles, and in its properties, from all other vegetable acids. It is not crystallizable, which distinguishes it from the citric acid: its precipitates of iron are yellow:—it is entirely volatilized by heat; — and it is obtainable in a concrete form; which last circumstance distinguishes it from the malic acid. It takes away metallic substances from the nitrous acid; as also iron, copper, and zinc, from the sulphuric; and it forms salts, all more or less deliquescent.

Extract from a Memoir, by M. PROUST, *on Prussian Blue.*

M. PROUST informs us that there are two sulphats of iron, —one green, crystallizable, containing $\frac{27}{100}$ of oxygen, insoluble in spirit of wine, unalterable by gallic acid, and yielding not a blue but a white precipitate to alkaline prussiates:—the other, red, deliquescent, not crystallizable, soluble in alcohol, and containing $\frac{48}{100}$ of oxygen. This sulphat has exclusively the property of giving a blue colour with alkaline prussiats. Prussian blue, kept in a phial with water impregnated with sulphurated hydrogen, loses the portion of oxygen, which makes the difference between the white and the blue sulphat; and the prussiat, thus reduced to whiteness, has exactly the same properties with regard to alkalies, as the white prussiat made immediately from the green sulphat.

Letter of M. BARTHOLDI *on a Calculus from the Rectum of a Horse.*

The experiments here related give for the constituent parts of this calculus,

Magnesia	-	-	0,18
Phosphoric acid		-	0,26
Ammoniac	-	-	0,032
Water	-	-	0,46
Animal matter		-	0,04

Extract from a Memoir on Camphor. By B. DE LA GRANGE.

The author concludes that camphor is an oil rendered concrete by carbon; for, by addition of alumine and distillation, there may be obtained a volatile oil and carbon. By nitre and acid may be obtained an acid different from all vegetable acids in its crystallization; in its solubility in the cold; in its burning without residuum; in its not precipitating lime-water; in its producing no change on indigo, dissolved in sulphuric acid; and in forming peculiar salts, which give to the blowpipe a blue flame.—A second paper occurs below.

On the spontaneous Action of concentrated Sulphuric Acid on Animal and Vegetable Substances. By M. M. FOURCROY and VAUQUELIN.

We

We learn from this ingenious memoir that sulphuric acid is not decompounded by vegetable substances, but that, by the action of this acid, the oxygen and hydrogen of the vegetable partly unite to form water, and partly with carbon to form acetous acid; while the residuum of the carbon is separated.

From the experiments with sulphuric acid and alcohol, it is concluded that alcohol differs from ether in containing more carbon, and less hydrogen and oxygen; and that oil of wine is to ether nearly what ether is to alcohol;—that the formation of ether is not due to the immediate action of the principles of the sulphuric acid on those of the alcohol, but to a real re-action of the elements of the alcohol, *occasioned* only by the sulphuric acid; that the operation is divided into two principal periods, in only one of which ether and water form; in the other, oil of wine, water, and acetous acid; and that, as long as ether forms, the sulphuric acid is not decompounded.

Observations on a native Sulphat of Strontian. By M. GUYTON.

This author finds sulphat of strontian mixed with sulphat of barytes, in a specimen from Saxony.

Reports concerning the State in which Saltpetre ought to be delivered into the Magazines of the Republic; and concerning the Manner of judging of its Qualities. By M. GUYTON.

This very important dissertation will be found of great consequence where nitre is manufactured in Europe.

Memoir on Senna. By B. DE LA GRANGE.

Some things of importance to those who take and those who administer this drug will here be found. The cold infusion, according to the author, should always be preferred, and the decoction totally rejected. Senna may be well given in powder along with sugar.

Extract from a Memoir on the odoroscopic Effects from inodorous cold and hot Bodies, and of odorous Substances. By M. PREVOST.

A paper full of curious and minute experiments.

Observations on Phosphorus. By M. BRUGUATELLI.

The theory of Prof. *Göttling*, of which we spoke in a former Appendix, seems to have afforded occupation for a time to half the chemists of the continent, and has at least had the good effect of making us better acquainted with the relation of phosphorus to oxygen and other gases. From the experiments before us, it is inferred that phosphorus dissolves very readily in pure oxygen, but without shining;—that the phosphorated oxygen gas becomes luminous as soon as it is mixed with any unrespirable gas;—that phosphorus dissolves with equal

promptitude in inflammable gas;—that oxygenated muriatic acid quickly fires phosphorus;—that phosphorus is not soluble in pure carbonic acid gas, though, at about the temperature of 60°, it shines better in this gas mixed with a small proportion of oxygen than in atmospheric air;—that water does not dissolve phosphorus, but holds in suspension very minute portions; especially such as have been impregnated with a principle of combustion;—that phosphorus, fired at the bottom of a balloon, where a little water has been put, not only decompounds the oxygen of the air in which it burns, but also that contained in the water;—that phosphorized oil of turpentine, or of thyme, is not luminous in atmospheric air at the ordinary temperature;—that alcohol dissolves phosphorus, which becomes luminous when the solution is added to any substance that combines with the alcohol, as water, or sulphuric acid;—that ether also dissolves phosphorus;—and that this solution is not decompounded by water, but when it is diluted with alcohol, then the ether, in combining with water, abandons the phosphorus; which, being divided into very minute particles, renders the liquor milky.

Memoir on the Proportion of Light produced by different Combustibles. By J. H. HASSENFRATZ.

In this accurate paper, conclusions different from those of Count Rumford are drawn. According to the price of the articles at Paris, tallow candles, particularly when old, afford a more œconomical light than the Argand lamp. These lamps, fed with spermaceti oil, are thrice as expensive as old candles.

Observations and Experiments on the Formation of Sulphat of Soda in Brine, at a Temperature below freezing; and an easy Method of separating the deliquescent Salts.

The observations in this paper are interesting both to the philosophical chemist and the salt-manufacturer.

Observations on the Acid of Tin, and the Analysis of Tin Ores. By M. GUYTON.

M. *Klaproth* had attributed the difficult solubility of tin ores, in acid menstrua, to the oxygen which they contain. M. GUYTON, however, perceiving no trace of disoxygenation in the operations by which M. *Klaproth* effected their solution, doubted this explanation; and he here relates facts which lead him to attribute the difficult solubility to the state of aggregation of the substances contained in the ore.

Inquiry whether the Formation of Carbonic Acid be essential to Vegetation. By M. DE SAUSSURE, jun.

M. DE

M. DE S. concludes, from his experiments, that plants as well as animals, vegetating in atmospheric air, continually form carbonic acid, both in the light and in the shade;—that they form it with the oxygen of the atmosphere;—that, when the production of the acid is not perceived, it is decompounded in proportion as it is formed;—that the presence, or rather the elaboration, of carbonic acid is necessary to vegetation in the light;—that light favours vegetation, inasmuch as it contributes to the decomposition of carbonic acid;—and that the strongest proportion of carbonic acid, which favours vegetation in the light, is injurious in the shade.

Objections to Spallanzani's Opinion on the Cause of the Light of natural Phosphori. By M. J. CARRADERI.

These objections seem perfectly founded. M. *Spallanzani* supposed that the phosphorescence of insects, wood, &c. is a slow combustion: but the present author observes that it takes place under oil.

Memoir designed to serve towards the History of the Sulphureous Acid, and its saline Combinations with the Alkalies and the Earths. By M. M. FOURCROY and VAUQUELIN.

From this very important memoir, we learn that the sulphits have no smell; that some have a sharp pungent taste; others not, but that all, after some time, leave an impression of sulphureous acid in the mouth; and that, when exposed to heat, they undergo two sorts of decomposition—either a portion of the sulphur separates, and they are converted into sulphats; or the sulphureous acid is disengaged, and the base remains pure;—that they are all, by the contact of oxygen, converted sooner or later into sulphats, and increase in weight;—that some sulphats are soluble in water, others scarcely so, but that all become soluble by excess of sulphureous acid;—that they are decompounded by almost all the acids, but that the result of the decomposition is different; some acids, as the sulphuric and muriatic, expelling the sulphureous unchanged; others on the contrary, as the nitrous, communicating oxygen, and converting the sulphit into sulphat;—that alkalies and earths act on these salts according to their affinity to the sulphureous acid, barytes decomposing all the other sulphits, then lime, potash, soda, magnesia, ammoniac, and alumine, having in their order the strongest affinity;—that most neutral or secondary salts act on the sulphits by double affinity, and form new compounds; thus calcareous, magnesian, barytic, and aluminous salts are decompounded by alkaline sulphits; and in all these cases earthy sulphits are formed, which, being soluble, fall down;—that, sulphit of ammonia excepted, all are con-

verted by charcoal and heat into sulphurs;—that some metallic oxyds, having but little affinity to oxygen, are reduced by the sulphits, which then become sulphats; others equally convert them into sulphats, but by a contrary action, viz. taking away a portion of sulphur;—that all metallic solutions, especially by the mineral acids, are decompounded by the sulphits; and metallic sulphits, for the most part insoluble, are formed;—that several of the metals, as gold, are precipitated in the reduced state by the sulphits, which then become sulphats;—that almost all the alkaline and earthy sulphits are insoluble in alcohol;—that they are decompounded by some vegetable acids, as the oxalic, the tartaric, and the citric, but not by the acetous or acetic, nor the benzoic.

New Means of furnishing Water and Heat for Chemical Experiments, almost without Expence. By M. GUYTON.

This ingenious paper deserves attention from all those who are desirous of engaging, from any motive, in chemical researches, and who have not the convenience of an elaboratory. The means here described consist principally of an Argand's lamp, fitted up in a peculiar manner, as represented in an annexed engraving.

Examination of certain Properties of Platina. By the Same.

In this paper, the cohesive force of platina, and its adhesion to the surface of mercury, are determined. It is also shewn that platina amalgamates by the assistance of heat; and that when hot it is oxydated by oxygenated muriat of potash.

Memoir on a new Metallic Substance contained in the Red Lead of Siberia. By M. VAUQUELIN.

The author compares the acid of this new metal with that of molybdaena, and concludes with a hope of being able to lay the new metal itself before the National Institute, as soon as he shall procure a sufficient supply of the mineral. He proposes to call it *chrome*, because it colours all its combinations. With potash, it forms a bright yellow salt.

Second Memoir on Siberian Red Lead. By the Same.

M. VAUQUELIN here describes the reduction of the acid of the red lead. Seventy-two parts afforded a metallic button of 24 parts. The metal was a grey white mass, formed of interlacing needles. He expresses a hope that, although the fragility and infusibility of this metal promise few useful applications, yet the acid, in combination with the metallic oxyds, and the oxyd with glass, may supply the painter and the enameller with fine and solid colours.

On the Acid Juice of the Pine-Apple. By P. A. ADET.

The slight experiments here recorded indicate the citric and malic acids.

On the Tanning Principle. By M. PROUST.

This philosopher has contrived to separate this principle completely from the astringent principle, or the acid of galls, by adding decoction of galls to muriat of tin. The tanning principle forms an insoluble precipitate; and, by adding water impregnated with sulphurated hydrogen, the tanning principle is liberated, and dissolves in the water. The last decoctions of galls contain, as the author thinks, this principle almost pure. A solution of glue is precipitated by the tanning principle into a magma, possessing all the properties of the gluten of wheat.

Observations on Sulphurated Hydrogen. By M. BERTHOLLET.

This excellent chemist, whose name has lately appeared but seldom in the Annals, and is destined to appear still more rarely in future, here presents us with a series of facts, which throw more light on the object of his researches than all preceding experiments. Sulphurated hydrogen, dissolved in water, reddens tincture of turnsol; combines with alkalies and absorbent earths, forming combinations which, when mixed with metallic solutions, change bases; decompounds soap, and takes the place of the oils; precipitates great part of the sulphur from solutions of sulphur of potash and lime, and tends to form, with the remainder, a triple combination. Sulphurated hydrogen therefore possesses all the properties which characterize the acids; and, if a number of common properties did not determine the author to constitute a separate genus of the compound hydrogens, he thinks that it ought incontestably to rank with the acids.—Combinations of sulphur with alkali cannot exist but in the dry state. Water is decompounded to a greater or less extent, according to circumstances. He calls the combination of sulphur and sulphurated hydrogen with an alkaline base, *an hydrogenated sulphur*. The neutral compound, formed by saturating a base with sulphurated hydrogen, is called an *hydrosulphur*. When sulphur finds hydrogen in any substance, as charcoal or sugar, it can produce sulphurated hydrogen without decompounding water. Thus is probably formed *hydrogenated sulphur* of ammonia, which an excess of ammonia renders fuming.—Hydrosulphurs speedily undergo an alteration from the action of oxygen, which combines with hydrogen; so that, on the least contact of the air, they assume a yellow tint, and are at last transformed into hydrogenated sulphurs.—When alkaline sulphurs decompound water, a quantity of *sulphuric* acid in proportion is formed: but, when the hydrogenated sulphurs, or the hydrosulphurs, are formed by the action of the air, it is always sulphureous acid that is first formed.

After

After some observations on the union of metals and the above-named bodies, it is remarked that, by sulphurated hydrogen and alkaline hydrosulphur, the smallest quantity of metal in a solution may be detected; and, as all the metals, except oxyd of arsenic, are precipitated by hydrosulphur, and the earths are not, (except alumine, which can be taken up again by potash,) after having dissolved all that is soluble of a mineral substance, the separation of the earthy and metallic parts may be immediately effected.

Notice of a Memoir by M. GUYTON, *on the Tables of the Composition of Salts.*

A very curious difficulty is here started against the computations of the ingredients of saline bodies. There ought, by calculation, in some double decompositions, to be an excess of acid or alkali: but the mixture is always neutral.

Discovery of a Violet Purple Colour which resists Acids, Alkalies, and Oxygen, in the Leaves of the Socotrine Aloe. By S. FABBRONI.

Observations on the Fabrication of Verdegris, and of Crystals of Venus. By J. A. CHAPTAL.

The processes in use at Montpellier are here minutely described, and a proposal is offered for improving the latter.

On Areometry. By J. H. HASSENFRATZ. 1st Memoir.

Of this series of papers, which appear to be far superior to any thing yet written on the subject, we shall speak when the whole is brought to a conclusion.

Description of the Manner in which Whiting is prepared. By B. DE LA GRANGE.

Notice of an Acid obtained from Animal Substances, or the Zoonic Acid. By M. BERTHOLLET.

To obtain this acid, lime is added to the liquid distilled from animal substances, after the separation of the oil. The mixture is boiled, or distilled, to drive off the carbonat of ammonia. When the pungent smell ceases, the liquor is filtered, a little lime is added, and the whole is boiled till the odour of ammonia entirely ceases. What remains is *zoonate* of lime; which is once more filtered; and a little carbonic acid is added to precipitate the lime.

The liquor is the zoonate of lime, with which double decompositions may be effected. To obtain the zoonic acid, phosphoric acid is added, and distillation is performed. The zoonic rises at about the heat of boiling water. It has a smell like frying meat: but no striking properties have yet been discovered.—

It is suggested, in a subsequent number, that this acid may be the sebaceous acid!

Analysis of the Chrysolite of the Jewellers, or of Commerce. By M. VAUQUELIN.

This chrysolite gave 54, 28 of pure lime and 45, 72 of acid of phosphorus; which agrees exactly with M. *Klaproth*'s analysis of the apatite.

Analysis of the Beryl. By the Same.

The principal part of this paper is employed in detailing the chemical properties of a new earth, found in the beryl, and also in the emerald. This earth approaches nearer to alumine than to any of the other earths, but has a stronger attraction for nitrous acid, and differs in many of its habitudes with regard to precipitants. The most characteristic property of this earth is to form sweet salts; and hence the editors of the Annals propose to call it *glucine*.

Observations on the Means and the Necessity of cultivating Barilla in France. By J. A. CHAPTAL.

Memoir on the Liquid Storax. By B. DE LA GRANGE.

This substance is composed of the benzoic acid and a resin. The best method of purifying storax is to make a tincture of it with alcohol by distillation. In preparing ointments with storax, and with resins in general, too much heat should not be given, because they are easily decomposed. There is a great difference between ointment with storax purified by alcohol, and that by heat.

Chemical Observations on the Epidermis. By J. A. CHAPTAL.

The skin is dissolved by the continued action of hot water, but not the epidermis. Alcohol long digested on the epidermis does not attack it. Caustic alkali and lime dissolve it.

Pyrometrical Essays, to determine how far Charcoal is a Nonconductor of heat. By M. GUYTON.

A body surrounded by charcoal does not receive above $\frac{2}{3}$ of the heat of another surrounded by siliceous sand.

Memoir on the Spiritus Rector, the Aroma, or Principle of Smell of Vegetables. By M. FOURCROY.

In this elaborate paper, a number of erroneous ideas are corrected. The author shews that there is no particular principle which can be regarded as the *spiritus rector*. The smell always depends on some of the immediate principles of the plant. This may be extractive, or mucilagenous, as in borage; of a fugacious oily nature, as in jasmine; of an oily volatile nature, as in mint; of an aromatic and acid nature, as in benjamin; or of an hydrosulphureous nature, as in the distilled water of cabbage.

On

On the Effect of Mordants in dyeing Cotton red. By J. A. CHAPTAL.

In disentangling the perplexed process for dyeing with madder, this gentleman finds a combination of three mordants necessary, viz. oil, the astringent principle, and alum.

Analysis of the Emerald of Peru. By M. VAUQUELIN.

This author finds that the emerald and the beryl are composed of the same principles; the colouring matter excepted; which, in the emerald, is the new metal *chrome*.

On the Use of Oxyds of Iron in dyeing Cotton. By J. A. CHAPTAL.

M. CHAPTAL ridicules the attachment of dyers to this or that acid for a solvent of iron. He says that, by the following simple method, all the shades which can be desired may be obtained, by only varying the strength of the solution. Cotton is put into a cold solution of sulphat of iron, at 3° of the areometer. It is taken out, strongly expressed at the peg, and plunged into a ley of potash at 2°, into which solution of alum is poured to saturation.

Historical Notice respecting M. Bayen. By M. LASSUS.

'*Bayen*, who in all his operations sought only the truth, and yielded only to evident proofs, because the habit of experiment had rendered him distrustful, began by doubting the existence of phlogiston. He communicated his doubts to some friends, and at last to the celebrated *Macquer*, who did not approve them. It was principally in working on the precipitates of mercury, that *Bayen* became fully convinced of the falsehood of *Stahl*'s doctrine; and that he acquired evidence that metallic oxyds owed their weight to the absorption of one of the constituent parts of atmospheric air. He made experiments so exact, that he succeeded in calculating the weight of the substance fixed in the metal. When he came to offer to the Academy of Sciences these researches, *Lavoisier* was present. He also was employed on metallic oxyds. Enlightened by the ray which was cast on science, *Lavoisier* re-enters his elaboratory, repeats *Bayen*'s experiments, finds them exact, and discovers that a portion of the air obtained from metallic calces is much purer than that of the atmosphere. *Lavoisier*, then breaking the shackles of ordinary rules, and applying his vast conceptions to the whole of the science, tears the veil which *Bayen* had only lifted, and becomes the founder of one of the most memorable epochs of chemistry.'

Researches concerning the Gas produced in the Passage of Aqueous Vapour through red-hot Tubes. By DEIMAN, TROOSTWYK, and LAWRENBURGH.

These authors evidently prove that, on preventing the access of air to the earthen tubes, no gas appears; and that therefore the supposed production of azotic gas is occasioned simply by the penetration of the external air.

Analysis

Analysis of the Ruby Spinel. By M. VAUQUELIN.

One hundred parts contain	Alumine -	86,00
	Magnesia -	8,50
	Chromic acid	5,25

Second Memoir on the Camphoric Acid, and its saline Combinations with Alkalie and Earths. By B. DE LA GRANGE.

M. DE LA G. goes through these compounds in their order, but we do not observe any remarkable results.

Apparatus of M. Welther to saturate Potash or Soda with Carbonic Acid.

This complicated apparatus is absolutely unintelligible without the plates.

On fulminating Explosions produced with different Bodies by Acid of Phosphorus. By M. BRUGUATELLI.

In this paper, and in the addition by M. *Van Mons*, it is shewn that various nitrats and other bodies, as turbeth mineral, produce explosions when struck on an anvil with phosphorus. Pyrophorus and artificial phosphori, as they are called, also answer. Gold, precipitated by caustic fixed alkali, fulminates without admixture.

On the Death of several domestic Animals, occasioned by Washings of Phosphorus. By M. S.

These animals were fowls and turkeys. In the turkeys, nothing preternatural was found on dissection, except that the internal pellicle of the gizzard was a little hard or crisp, as if exposed to the action of strong heat. There were twenty-seven deaths in all, occasioned by severe convulsions, preceded by profound heaviness or melancholy. The stomachs were luminous in all; and grains of phosphorus, not yet digested, fell out on the turning out of the stomach, and shone on the ground.

A similar accident happened with M. *Pelletier*, who imputed it to phosphat of copper formed during the operation. The present writer ascribes the effect to simple phosphorus contained in the water, by which it had been washed after the preparation.

On the Ternary Combination of Phosphorus, Oxygen, and Azote. By M. F. HUMBOLDT.

Finding that in atmospheric air known to contain 27 or 28 of oxygen in 100, phosphorus did not produce a diminution of above 18 or 20; and nitrous gas, afterward added, not of above two more; the author concluded that a triple combination, or an oxydated phosphure of azote, must be formed. He infers, from his experiments, that phosphorus, whether burnt or sim-

ply left to shine in contact with atmospheric air, is a very uncertain eudiometer:—that nitrous gas almost constantly detects some hundred parts of oxygen in the residue of the phosphoric eudiometer;—that the azotes, in which phosphorous gives no light, and which do not diminish with nitrous gas, can by no means be regarded as free from oxygen;—that phosphorus equally dissolves in azotic and oxygen gas;—and that oxyds with double base form a combination which nitrous gas cannot decompound.

Examination of Dr. PEARSON's *Experiments on Urinary Calculi.* By M. FOURCROY; *with a Note by M.* GUYTON.

In M. FOURCROY's long discussion, Dr. PEARSON's experiments and reasonings are considered at great length. The French reviewer endeavours to shew that there is nothing of importance new in the Doctor's experiments, and that he would improperly transfer the lithic acid to the class of oxyds, under the name of the *uric oxyd.* M. GUYTON concurs in the opinion of his colleague. We shall see what reply Dr. P. makes to these criticisms.

Memoir on the Acetic Acid. By P. A. ADET.

The acetic acid, or radical vinegar, has hitherto been supposed to differ considerably from the acetous in its degree of *concentrate* oxydation. The radical vinegar, as is well known, is obtained by distillation from acetate of copper. M. ADET endeavours to shew that the acid of vinegar, not absorbing oxygen in its successive combinations with that oxyd, does not occur in different states;—that it constantly exists at the highest state of oxygenation which it can attain, and that it is consequently in the state of acetic acid;—that there exists no *acetous* acid, unless this term be applied to the tartarous and malic acids;—and that the difference between acetic acid from acetate of copper, and that obtained from vinegar, appears to consist in the smaller quantity of water contained in the former.

On the Difference between the Acetous and the Acetic Acid. By J. A. CHAPTAL.

From the decomposition of these two forms of vegetable acid, M. CHAPTAL concludes, in opposition to M. ADET, that there is a difference between them;—that there is less carbon in the acetic acid;—that, in the metallic salts, the acid is in the state of acetous acid;—that it passes into the state of acetic acid only by *decarbonisation*;—and that, in this acid, the oxygen does not appear capable of either addition or subtraction.

New Experiments on the pretended Conversion of Water into Azote, by the Dutch Society of Chemists.

This

This paper only explains how atmospheric air found its way into an apparatus employed by Prof. *Wurger* of Bonn.

G. I. CHRISTIAN *on the Fabrication of Alum in the Department of the Ourte.*

On some Properties of Strontian, and of Barytes. By M. VAUQUELIN.

Strontian and barytes have, with respect to silex and alumine, very nearly the properties of the alkalies. They combine with the latter earths, and divide them in such a manner as to render them soluble in the weakest acids. Strontian and barytes act on animal substances also just as alkalies do; expelling much ammonia, and converting the other principles into a fatty matter.

Experiments on the Congelation of different Liquids by an artificial Cold of 40° *below* 0, *of* REAUMUR's *Thermometer.* By M. M. FOURCROY and VAUQUELIN.

Ammonia, slowly cooled from 30° to 33° below 0, crystallizes: exposed to a sudden cold of 38° or 40°, it forms a sort of glue, and has scarcely any smell. Ether crystallizes very regularly at 35° below 0. This was the first time that such a consolidation had been effected. Alcohol does not become solid at the same cold.

Experiments on artificial Cold. By M. GUYTON.

Ammoniacal gas, as much as possible deprived of water, is condensed into a liquid at 48° below 0. It resumes the elastic form, in proportion as the temperature approaches that of the atmosphere. The author proposes to repeat this experiment.

On the Nitrous Gas, and its Combination with Oxygen. By A. F. HUMBOLDT.

On the Cause and Effects of the Solubility of Nitrous Gas in the Sulphat of Iron. By M. M. HUMBOLDT and VAUQUELIN.

These are among the most curious and important papers in the whole series. Dr. Priestley discovered that nitrous gas is soluble in sulphat of iron. The two chemists above named have ascertained that a most remarkable chemical change takes place during this solution. Ammonia and nitrous acid are formed in consequence of the decomposition of the water of solution of the sulphat. The forces which effect these new combinations are, 1. the attraction of the oxygen of the water for the nitrous gas, whence we have nitrous acid. 2. the attraction of the uncombined azote, and of that which constitutes nitrous gas for the hydrogen of the water; whence we have ammonia. 3. the attraction of the sulphuric acid for ammonia, whence

whence sulphat of ammonia. 4. that of the nitrous acid for oxyd of iron.

By applying the fact of the absorption of nitrous gas by sulphat of iron, the author has ascertained the ordinary condition of this eudiometrical test more exactly than had been before done. He finds that it always contains azotic gas, particularly if the nitrous gas be not produced from nitric acid of a proper strength. As a part, however, of this uncombined azote is formed into ammonia with sulphat of iron, it was necessary to try the nitrous gas with oxygenated marine gas, which are known to decompound one another. From these comparative trials, it appeared that about 5 parts in 100 of the uncombined azote were condensed into ammonia on being agitated with sulphat of iron.

On the whole, the authors conclude, 1. that the quantity of nitrous gas necessary to saturate 1 part of oxygen differs widely from 1. 8; and that, if the constituents of nitric acid be = 3. 9 : 1, those of nitrous gas cannot be (as *Lavoisier* says) = 2. 1 : 1.

2. That solution of sulphat of iron totally absorbs nitrous gas, separating the intermixed azote.

3. That oxygenated marine acid gas always detects more azote in nitrous gas than sulphat of iron does; and that this difference, which amounts to 0. 05, comes from the azote combining with the hydrogen of water to form ammonia.

4. That, during the contact of metallic substances with nitric acid, part of the acid loses some of its oxygen while the rest is totally decompounded; whence all nitrous gas is mixed with azote from 0. 10 to 0. 15.

5. That, in mixing nitrous gas with oxygen in the mercurial apparatus, there is only formed so much liquid nitric acid as there is water in the gases. The absorption appears very small, because (as is seen on adding ammoniacal gas) it remains dilated in the gaseous form.

6. That, on shaking nitrous gas with distilled water, nitrat of ammonia is formed by decomposition of the water, and by the action of a double affinity.

7. That the width of the vessels, in which nitrous and oxygen gases are mixed, has a sensible effect on the quantity absorbed.

8. That mixtures of nitrous and oxygen gases do not present such uniform results, as when atmospheric air is employed.

9. That an artificial mixture of 0. 27 oxygen and 0. 73 azote differs from atmospheric air, because the azote of the latter, by a chemical attraction, appears to prevent the oxygen from combining so freely with the nitrous gas as it appears to do with oxygen gas.

10. In

10. In analysing, with sulphat of iron, the residue left in the eudiometer by mixtures of nitrous gas and atmospheric air, the quantity of oxygen contained in the atmospheric air can be very exactly determined.

11. That, dividing the bulk absorbed from equal parts of nitrous gas, (containing from 0. 10 to 0. 15 of azote,) and of atmospheric air, by 3. 55, the quotient will nearly give the quantity of oxygen contained in the analysed air.

On the Application of Pneumatic Chemistry to Medicine, and on the Medicinal Properties of Oxygenous Substances. By M. FOURCROY.

This able chemist here enters much at large into the consideration of these topics, in a memoir of nearly 60 pages. He observes that,

'Since the theory of elastic fluids has entirely changed the face of chemistry; since a more philosophical doctrine has formed, from all the discoveries respecting gases, the foundation of a new and important science; medicine, like every other part of the history of nature, could not but receive a lively and unexpected light. Before this remarkable era, it was perhaps permitted to the art of healing to remain indifferent respecting certain vague ideas thrown out from time to time, or even to reject too hasty applications, more likely to be hurtful than advantageous. Now a new career is open in all branches of philosophy; now we may hope that the functions of animals, hitherto surrounded by such dark clouds, will be illuminated by the new light of the pneumatic doctrine. I have no hesitation in advancing that modern chemistry has done more for physiology within twenty years, than all the other sciences put together, for a century past..... It is no longer permitted to the physician, to remain a mute and insensible spectator of the movement imparted to the science of the animal œconomy. No practitioner can neglect to inform himself of the newly discovered results, if he be interested in the progress of his profession; or if he be animated with proper zeal for the advancement of medicine. The cold immobility of some, the affected indifference of others, the decided contempt of this man, the listless attachment of another to the doctrine of his forefathers, irritated self-love, the hatred of novelties, prejudices of all kinds, all the little passions that creep into society, the pleasantries which they occasion, the sarcasms with which they arm conversation, the ridicule with which they endeavour to cover inventors, the epithet of innovator which is thrown out against them—all this may retard for a few hours, perhaps for a few years, the progress of the new ideas. Truth however overturns all obstacles, and dreads neither the clamour of envy, nor the resistance of prejudice, nor the opposition of ignorance.'

In concluding, M. FOURCROY mentions with approbation the attempts that have been made in this country, towards carrying on this important investigation.

Letter on the Fall of Dew. By M. A. PRIEUR.

This author thinks that the dew of the evening and that of the morning are not the same; in other words, that the evening dew evaporates in the night, and that there is a new fall towards morning. He applies the principles laid down by M. *Monge* in the 5th volume of the annals, to the solution of the phænomena.

Experiments on the Excrements of Hens, compared with their Nourishment; and Reflections on the Formation of Egg-Shells. By M. VAUQUELIN.

In this paper, some entertaining particulars of the natural history of the fowl are mentioned: but no great light is thrown on the formation of the egg-shell. By experiments on a hen, fed on oats only, the author found that the siliceous part was diminished: but there seems no reason for supposing that the quantity of silex which disappears goes to form the lime of the egg-shell. Ashes of oats contain about $\frac{2}{10}$ silex and $\frac{4}{10}$ phosphat of lime:—no alkali; nor carbonat of lime. He mentions that, on fusion, oats (straw and all) are converted into glass; and that the straw along with flint contains alkali and carbonat of lime.

Considerations on the Experiments of Mayow. By M. FOURCROY.

M. FOURCROY here reviews Mayow with evident partiality to *Lavoisier*. It is natural, therefore, that he should not do Mayow justice. In his paper, there are inaccuracies of various descriptions. Some do not affect his reasonings; others are material. Of the former kind, is the erroneous assertion that Dr. Beddoes reprinted Mayow's works in 1790. Of the latter, is the following passage: 'I ought to observe that Mayow has not pushed, so far as he seemed capable of doing, the first data that presented themselves to him; that the thread which he found soon broke in his hands; that he only opened a career of which he did not even suspect the extent; that he was not sufficiently struck with the importance and singularity of his first discoveries.'

This is, we think, far from a just representation. The thread in his hands was broken, not by any want of care to pursue it, but by the supreme necessity of death. Whoever will take the trouble of reading Mayow's dedication of his tracts to Coventry will see, that nothing can be more false than the supposition of his not being sufficiently struck by the importance of his discoveries. Never was Ευρηκα pronounced with more fervour. From this passage, and that in which M. FOURCROY speaks of Mayow in comparison with Boyle, we con-

clude that he was ignorant of the early period of life at which Mayow was cut off, and of the external relations of the two men.

On the Absorption of Oxygen by the simple Earths, and its Influence on the Culture of the Soil. By A. F. HUMBOLDT.

The author of this memoir here contents himself with relating facts, without assigning causes. He finds that not only mould but several of the simple earths have the property of taking oxygen from atmospheric air. The following experiment he made in the presence of M. *Vauquelin*.—Atmospheric air, containing 27 parts of oxygen, was put into a tube with phosphorus; another portion of the same air was put into a tube with clay from Montmartre. In 10 days, the phosphorus had absorbed but 0. 07 parts, and the clay 0. 10 of the oxygen. This and similar facts lead to many speculations on the state of the air in the interstices of the soil; on the formation of nitre; and so on.

On the Nature of the Acid of Amber. By M. GUYTON.

The experiments here related shew that the most certain method of purifying the succinic acid is by repeated cohobations with nitrous acid; taking care not to give a degree of heat capable of subliming the acid of amber;—that this acid ought to be ranked among those which are capable of being decompounded by a new combination of their base, and which resolve themselves into carbonic acid, carbonated hydrogen gas, and acetous acid;—that the succinic acid, united to soda, is capable of being decomposed by heat without being volatilized;—that, during this operation, a part of the elements recombine in proportions which constitute the acetous acid, as *Scheele* had observed, and as had been afterward denied by *Heyer*;—and that the nature of this acid concurs with the observations of mineralogists to assign to amber a vegetable origin.

Report of M. GUYTON *on M.* CLOUET's *Experiments concern- the different States of Iron, and the Conversion of Iron into Steel.*

It is here asserted that M. CLOUET has attained the great object of fabricating *cast steel*, in a state of such perfection as to stand a comparison with the finest sorts from this country. The conversion is affected by cementing forged iron in a mixture of carbonat of lime and burnt clay. In this process, it is said, the carbonic acid of the lime-stone is decompounded by the attractions of part of the iron for charcoal, and of another part for oxygen.

Note by M. VAUQUELIN *on the Analysis of Brass; with Reflections on the Precipitation of one Metal by another.*

That one metal may precipitate another from its solution, it is not only necessary that the former have more attraction for oxygen, but that its oxyd attract the solvent with more force. In practice, when we want to separate one metal from its solution by another, in order to know its quantity, it is farther necessary that the new salt be soluble in water; that it be not decompounded by the addition of a large quantity of water; that the new oxyd be soluble in the same quantity of acid as the former; that the precipitant have not a greater tendency to decompound the solvent acid, than to take the oxygen from the dissolved metal; and that the precipitated metal be not capable of combining with the precipitant, which is commonly employed in excess.—The shortest process for analysing brass (and the author says that it is as exact as any other) is to dissolve a known quantity in nitric acid; to pour the solution into a phial with a stopper: to add caustic potash till there be an excess sensible to the taste; and to agitate the mixture immediately. After a few minutes' agitation, the whole is to be thrown on the filtre; through which the zinc passes dissolved in the potash, the oxyd of copper remaining. This being washed, and dried by a gentle heat, it is weighed; and the weight of the metal is known by deducting 0. 35, the weight of the oxygen.

Analysis of the Cobalt of Tunaberg. By M. TASSAERT.

The author finds that cobalt, so purified that no test shews the slightest vestige of iron, is perfectly obedient to the magnet.

Notice of some peculiar Matters found in Animal substances, treated by Nitric Acid. By M. WELTER.

By treating silk with nitric acid, not only oxalic acid was obtained, but a yellow matter; which, on the addition of potash, formed a triple composition that exploded like gun-powder. M. WELTER calls the third ingredient *amer*.

Observations on the Marine Acid. By M. TASSAERT.

Dr. *Girtanner* having adduced a number of facts calculated to prove that hydrogen is the radical of the marine acid, M. TASSAERT here shews the irrelevancy of these facts; which, indeed, was already obvious to every intelligent reader.

New Experiments on the Fusibility of mixed Earths, by virtue of the Action which they exert one on another. By M. GUYTON.

This able philosopher proposes to ascertain the attractions of the earths both in the dry and the moist way. The present paper contains a very few facts to this purpose.

Extract

Extract from M. Haussman's Memoir on dyeing by Solutions of Tin, and the coloured Oxyds of this Metal.

The observations contained in this paper are very interesting, not only with regard to the art of dyeing, but with respect to the chemical knowlege of the effects produced by metals at different degrees of oxygenation, the union of the oxyds with the solvents, and the compositions of which these oxyds are capable.

Notes and Correspondence respecting Calculi.

M. FOURCROY here announces that he and M. VAUQUELIN have discovered in calculi four substances, unobserved by their predecessors.—viz. urate of ammonia. 2. Ammoniaco magnesian phosphat. 3. Oxalate of lime. 4. Silex, but this has been found only in one specimen. He speaks of the solution of calculi in acids and alkalis, as so dilute as to be capable of introduction into the bladder without danger.—We shall be happy to see the complete work here announced.

Reflections on the Analysis of Stones in general. By M. VAUQUELIN.

The discovery of every new body alters the chemical tests for bodies of the same order. The author here describes the chemical processes necessary for the detection of the several earths; and they are very considerably different from those recommended by Bergman.—The present excellent paper well deserves translation. M. VAUQUELIN mentions his having found potash in the lepidolate of Rozena in Moravia, and in the green feld-spath of Siberia.

Examination and Analysis of a Quartz, crystallized exactly like Dogtooth Spar. By M. GUYTON.

M. G. concludes that this groupe was rather cast or moulded than produced by crystallization in free space. He mentions the acid of tartar as a test for potash, when mixed with soda.

We have thus pursued the series of Numbers, to as late a date as we believe they have been received in this country. We finish for the present with No. 86; and we mean to pay the earliest attention to this work in future.

Bed...s.

ART. XII. *Principes Elémentaires*, &c.; *i. e.* Elementary Principles of the natural and chemical History of Mineral Substances. By MATHURIN-JACQUES BRISSON, Member of the National Institute, and Professor of Natural Philosophy and Chemistry in the Central Schools of Paris. 8vo. pp. 253. Paris. 1797.

THE crowd of modern publications on scientific subjects, which are continually issuing from the press, might be

naturally divided into three classes. Some of them serve to increase our stock of knowlege; others, though containing no new discovery, are still useful on account of the clearness of arrangement by which they explain to many what is known to a few; and others may, for the most part, be considered as crude compilements, tending only to counteract instead of promoting the diffusion of true and useful science.

The work now before us seems to belong to the second class of publications, and to deserve a considerable degree of praise. It is divided into two Parts, viz. *Lithology*; in which the author treats of the earthy and stony substances; and *Metallurgy*, or the knowlege of metallic substances. He begins his *Lithology* by giving the definition and chemical characters of five primitive earths, lime, magnesia, barytes, alumina, and silica;—of the strontian and zircone, he speaks in a supplement at the end of the book. These primitive and hitherto undecompounded earths are sometimes combined with acids, and form the saline stones or terreous salts; sometimes are only mixed between them, and form the stones properly so called; and these stones sometimes are mixed together and form what is called rocks, and at other times are altered in their nature by the fire of volcanoes. The author, consequently, divides the stones into four orders; 1. Saline stones; 2. Stones properly so called; 3, Rocks; 4. Stones which are the produce of volcanic fires. Each of these orders is divided into five *genera*, answering to the simple primitive earths; and these genera are again divided into species, according to the particular combinations with several principles: except the 4th order, which is only composed of three articles, the pumex, the lava, and the basaltes.

The *Metallurgical* part of the work is divided into two orders; the first treats of the metals, and the second of the semi-metals. The metals are again divided into two *genera*; 1. Perfect, 2. Imperfect metals; according to the difference of their fixity when exposed to the action of fire. The first are gold, silver, and platina; the second are copper, iron, tin, and lead.—The semi-metals he does not separate into genera, but examines them individually, and reckons eleven, *viz.* mercury, bismuth, cobalt, nickel, zinc, antimony, tungsten, arsenic, manganese, molybdæna, and titanium. This part is concluded by tables of the properties of metallic substances under the following different heads; of their fixity when exposed to fire, ductility, fusibility, hardness, tenacity, elasticity, sonorous property, weight, oxidability, increase of weight by oxydation, affinity with the acids, acidification, and finally their adherence to mercury.

Having

Having sketched the outlines of this elementary work, it remains only to say that, though professedly the author does not intend to give any thing new, he deserves well of science on account of the clearness which pervades the whole book, and the selection of the ideas which he conveys to the young readers for whom it is chiefly designed; and for having condensed so much useful information in a small volume, without any confusion.

Corrêa.

Art. XIII. *Voyage Pittoresque*, &c.; *i. e.* A Picturesque Tour through Syria, Palestine, Phœnicia, and the Lower Egypt; with about 330 Plates; the Original Drawings by Citizen *Cassas*, &c. Large Folio. Number I. containing Six Plates. Paris, 1798. Imported by Taylor, 56, High Holborn.

This truly magnificent work will consist of three volumes; the first of which is intended for the northern Syria, the second for Cœlosyria and Phœnicia, the third for Palestine and the Lower Egypt. Each volume will contain, besides the corresponding plates, a preliminary discourse by the celebrated *Volney*, (well known by his former publications respecting the same countries, and by his fanciful and revolutionary work entitled *The Ruins* *,) followed by a proportionate quantity of letter-press, giving an account of the excursions and observations of the author. This part of the work has been revised and digested, by Messieurs *La Porte du Theil*, *Le Grand*, and *Langles*; the first of whom superintends the historical part and the recital of the journey; the second, what concerns the architecture; and the third, what relates to the Oriental languages and inscriptions. The plates, which are to appear before the letter-press is published, will be accompanied by short explanations of the subjects represented; which is the case with respect to the six plates composing this Number.

The first of the plates before us represents the Cenotaph of Caius Cæsar, the grandchild of Augustus, situated near Hhems (the antient Emesa) in Syria; together with an Eastern Caravan, resting near the spot, and a distant prospect of Mount Lebanon. In the second, we find a view of part of the village of Cana in Galilee, in the road from Nazareth to Mount Tabor: with a fountain, and a groupe of the present inhabitants, chiefly women, dressed in their actual *costume*. The third plate gives a general perspective view of Jerusalem, in its present state, taken from the Mount of Olives, beyond the brook Cedron; affording a prospect of the Valley of Josaphat, Mount

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* See Review, N. S. vol. vi. p. 547.

Sion, and the Mosque which now occupies the place of the Temple of Solomon. The two following plates represent the whole of the front, and some particular details, of the building called *the Tomb of the Kings of Juda;* which the author, on very plausible grounds, conjectures to be of a more modern date; referable, perhaps, to the reign of Constantine the Great. He thinks that in this curious monument might be traced the Egyptian solid system of building, blended with the decorations of the Grecian Doric order, and the Roman taste in the entablature and its ornaments; while the execution of the whole appears to him to belong to the Greek artificers of the Constantine period. The sixth and last plate represents a groupe of female fortune-tellers, on the banks of the Nile, and the Turkish villas on the isle of Raoudhah, opposite to the antient Memphis.

Great taste is displayed in the composition of the original drawings, which generally convey to the beholder instructive ideas respecting both the antient and the present state of the country. The typographical part, and the engraving of the plates, are beautiful, and class this work among the most elegant productions of the French presses.

Corrêa.

ART. XIV. *Voyage Pittoresque*, &c.; *i. e.* A Picturesque Tour through Istria and Dalmatia; the Original Drawings by M. *Cassas*, &c. &c. Folio. Numbers I. to IV. Paris, 1798. Imported by Taylor, 56, High Holborn.

A FEW years ago, the Abbé *de Saint Non* published, in France, a Picturesque Journey through the Two Sicilies, and the Count *de Choiseul-Gouffier* a similar Tour through Greece *. Their magnificent works have set an example, which we now see followed by M. *Cassas* † in his Picturesque Travels through Syria, Palestine, and the Lower Egypt, (of the first Number of which we have given an account in the preceding article,) and in this Journey through Istria and Dalmatia. According to the printed proposals, it will be comprehended in a folio volume, and the number of plates will be above sixty; of which twenty-four are given in these four Numbers, without any letter-press or explanation whatever. They represent views of the principal antient remains, and of

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* See M. Rev. vol. lviii. and lix.

† This artist had been employed by the Count *de Choiseul-Gouffier*, in quality of draftsman, during that nobleman's tour through Greece.

remark-

remarkable landscapes. The *Porta aurea* (an antient triumphal arch), the amphitheatre, and the Temple of Augustus, at Pola in Istria; the temples of Jupiter and Esculapius at Spalatro; and the remains of sarcophagi, altars, and inscriptions, at the foot of the mountain of Clissa in Dalmatia; are the most prominent objects among the antient remains; the cataracts of the river Kerka, that of the river Cettina called Welika-Gubowiza, and the grotto and cataract of the Ruecca, are truly surprising objects of romantic landscape beauty. The same taste prevails in these plates as in those of the Syrian Picturesque Journey; in both, great attention seems to have been paid to the *costume* of the present inhabitants; and they equally convey, to the eye of the beholder, striking instances of antient taste and grandeur, and actually existing ignorance and wretchedness. We have particularly noticed, in this point of view, the plate No. 27. representing the residence of the *Podestat* or chief magistrate (of Pola, as we suppose, from the number of the plate) and governor, between two antient temples of an elegant taste. Nothing could impress more forcibly on the mind, the *quantum* of decline which the country has suffered.

The size of this work is the same with that of the Syrian Picturesque Journey; and though we have seen nothing of the typographical part, except the *Prospectus* which has accompanied these Numbers, we are disposed to believe that it is as beautiful as in its sister publication.

Corrêa.

Art. XV. *An Universal European Dictionary of Merchandize*, in the English, German, Dutch, Danish, Swedish, French, Italian, Spanish, Portuguese, Russian, Polish, and Latin Languages. By Philip Andrew Nemnich, I. U. L. 4to. 1l. 1s. Johnson, &c. London. 1799.

The grand problem of an universal language will not, perhaps, be resolved by abstruse philological speculators on the best possible organization of inflective and derivative syllables:—but an approximation to the adoption of universal words has already been effected in many sciences, particularly in botany and chemistry, and is daily extending to some new branch of knowlege, to the exclusion of partial and national nomenclature. In this way, disconnected, insulated, and improper terms gradually give place to systematic, allied, and appropriate names. From books, they pass into the conversation of the cultivated, and thence into vulgar use; and thus a perpetual progress is made towards an idiom universally intelligible.

There

There is no good reason why the terms of commerce and of art should submit more reluctantly to the correction of the philologist, than those of philosophy and science. Many merchants' clerks pique themselves on adorning our magazines with sonnets: let the technical jargon of trade be bolted to the bran in the sieves of etymology; and these gentlemen will pique themselves on writing an invoice, as if they understood the words of which it consists.

We have already noticed (Rev. vol. xi. p. 561.) one attempt of M. NEMNICH to *catholicize* the phraseology of natural history; and we have now to record a similar attempt on the commercial language of Europe. The catalogue of words is arranged in the following order: English, German, Low Dutch, Danish, Swedish, French, Italian, Spanish, Portuguese, Russian, Polish, and Latin. By these means, a single glance discovers which of the rival names is most generally intelligible,—this is one ground of preference; and which is etymologically purer,—this is a higher motive of choice. The *lingua franca* of the counting-house is so little fettered by printed authorities, and so likely to find a convenience in varying the terms, which have most emphatically been maintained in the tariffs and books of duties of the several sea-ports, that there is no reason for despairing of introducing any rational innovation.

Terms so inexpressive or improper as Barbadoes Tar for Bitumen, Benjamin for Benjoin, Brownstone for Manganese, Dutch Pink for a yellow paint, &c. will disappear by simple exposure. Others of a somewhat vulgar complexion, such as Dragon's blood, Fistinuts, Jews' ear, Jews' trumps, Sowbread, Wake-Robin, Worm-Seed, will gradually be exchanged for terms more scientific or more polite.—A few words are mis-spelt by our author—Bellowses for Bellows, Bezoard for Bezoar, Cruel-ribbons for Crewel-ribbons, Callimanco for Calamanco, and perhaps, but for this there are many authorities, Train-oil for Drain-oil; as it is the oil which *drains* from blubber. A few others are ill defined: Canvas is not exclusively descriptive of Irish sail-cloth, but of many kinds of hempen cloth, from whatever country: 'smallcoal is not synonimous with charcoal: nor is Petty Wares the technical term for Haberdashery. A great number of words are totally omitted, particularly the names of manufactured articles of commerce—a list which might best be completed by the assistance of the riders or travellers of manufacturing houses.

To the Catholicon, or Universal Dictionary, succeeds a separate vocabulary for each language, with an English interpretation. This part of the work cannot but greatly facilitate the

the farther diffusion of our language, as the medium of commercial intercourse between the Baltic nations. As far as it goes, it is well executed: but there are in course deficiencies, which the author hopes to remedy in a future edition; and he solicits corrective contributions.

Tay.

ART. XVI. *Memorias da Acad. R. das Sciencias de Lisboa*, &c. *i. e.* Memoirs of the Royal Academy of Sciences of Lisbon. Vol. I.

[*Article concluded, see our last Appendix*, p. 551-554.]

WE now resume the consideration of this volume, in order to attend to those papers which have not yet been noticed, and which belong to the class of

MATHEMATICS.

General Solution of Kepler's *Problem of the Mensuration of Wine Pipes, and other Casks.* By J. MONTEIRO DA ROCHA.

This problem was proposed by Kepler in his *Stereometria doliorum*; and several solutions were exhibited by different mathematicians, which are considered by the present author in the first part of his memoir. He then proposes the problem according to the following form: "To determine the area of any segment of a solid of Revolution, made by a plane parallel to the axis of the same."

Memoir on the true Principles of the Method of Fluxions. By Mr. STOCKLER.

This memoir is introduced by some preliminary observations on the methods of explaining the fluxionary calculus, as given by its inventors and by succeeding geometricians. That conciseness and rigorous exactness, that perspicuity and precision, are not by the nature of things incompatible, will be readily allowed; yet, in the doctrine of fluxions, it is undoubtedly true that, whatever advantage its methods have from their generality and facility of application, they are deficient in that evidence and geometrical rigor which characterize the methods of the antient geometricians. As in the present Appendix (see the first article) this curious and important subject has been so particularly discussed, we shall here content ourselves with examining what Mr. STOCKLER has done, and with what success.

In the first part of the memoir, he animadverts with judgment on the methods pursued by Leibnitz, Newton, Maclaurin, Euler, and D'Alembert, for the purpose of elucidating and establishing the fundamental truths of the theory of fluxions. In the explanation of his own method, Mr. S. supposes quantity

tity to be generated by motion, or to pass through its several states of change either by a constant or variable flux. The common definition of a fluxion is, that it is not the quantity really generated, but what would be generated, were the motion continued uniform from any point. This quantity, however, is not immediately assignable; to ascertain it, the author reasons nearly after the following manner;—suppose the motion continually to vary then in the interval of two instants of time, during which the quantity increases, there is always a certain point at which the rate of motion is such, that, if it continued constant, for a time (t), a quantity would be generated equal to the real increment generated in variable motion. This rate of motion, or velocity, or tendency, is called the hypothetical fluxion, to distinguish it from the true and proper fluxion; and, from its definition, it follows that the product of it and the time (in which the real increment is generated) is equal to the increment; now the hypothetical fluxion (taking two instants of time) is always contained between the proper fluxions at the first and second instant; that is, is always greater than the true fluxion at the first instant, and less than the true fluxion at the second, if the motion increases; and the contrary, if the motion diminishes. By diminishing the interval of time, however, the hypothetical fluxion may be made to approach to the true fluxions more nearly than by any assignable quantity. Hence the ratio of the proper or true fluxions is the *limit* of the ratio of the hypothetical fluxions, and the real object of investigation is this limit.

Let φ be any quantity involving x, y, z, &c. $F\varphi$ a function of it; let $\Delta\varphi$ be the hypothetical fluxion of φ: then $t\Delta\varphi$ is the increment; and let $d\varphi$ represent the proper fluxion of φ, &c. Now, since φ becomes $\varphi+t\Delta\varphi$, it follows that

$$t\Delta F\varphi = F(\varphi+t\Delta\varphi)-F\varphi : \text{hence}$$

$$\Delta F\varphi = \frac{F(\varphi+t\Delta\varphi)-F\varphi}{t} : \text{but the limit of the ratio}$$

of the hypothetical fluxions is the ratio of the proper fluxions, which limit is obtained by putting $t=o$; in which case $\Delta\varphi$ becomes $d\varphi$, &c.

Hence $dF\varphi$ (the proper fluxion of $F\varphi$) $=\frac{F(\varphi+td\varphi)-F\varphi}{t(o)}$

but the developement for the function $F(\varphi+td\varphi)$ being $F\varphi+P'td\varphi+P''t^2d\varphi^2$, &c. we have $dF\varphi=P'd\varphi$

The quantities P', P'', P''', &c. are different functions of $F\varphi$; it appears, then, in order to find the fluxion of $F\varphi$, only necessary to calculate the second term of the series, $F\varphi+P'td\varphi+$, &c.

Such

Such is essentially the method of Mr. STOCKLER.—We shall now consider to what degree he has succeeded in rendering the *metaphysique* of fluxions luminous and exact. In the first place, the objection justly made against the method of Newton, Maclaurin, &c. is equally valid against that of Mr. S. which is grounded on the principle of motion;—a principle foreign to the nature of the subject.

By the introduction of the hypothetical fluxion, we are enabled, perhaps, to form a more distinct idea of the nature of the proper fluxion: but the grounds of the method, the fundamental principles, are not new; they are precisely the same as in the method of prime or ultimate ratios or limits; for, in this latter method, the ratio of the fluxions of quantities is the limiting ratio of their increments; which limiting ratio is obtained by putting the increment $=o$. In Mr. S.'s method, the ratio of the proper fluxions is the limiting ratio of the hypothetical fluxions; which limiting ratio is obtained by putting the time $=o$:—but the hypothetical fluxion multiplied into the time is the increment; the two methods are therefore essentially the same: that of Mr. Stockler may *appear* different, since in it are introduced a new term and a new symbol, which give to the old method a different and rather an improved appearance: but the body remains the same, the garb only is altered.

The author has combined with the theory of limits that of the developement of functions into series; it is indeed this latter theory which comprehends the true principles of the fluxionary or differential calculus; yet what he has done on this subject is to be noted as deficient; for in the Formula $F\varphi + P'w + P''w^2$, &c. the developement of $F(\varphi + w)$ is not demonstrated; neither is it shewn that all the powers of w are whole positive powers (and there are particular cases in which a fractional power enters); nor why P', P'', &c. are independent of w; nor after what manner they are derived from the original function $F\varphi$.

In the latter part of the memoir, it is observed that the formula of Taylor, for the conversion of functions into series, may be demonstrated by the help of the forms previously established. The Series of Taylor was proved in the Berlin Acts for 1772 by M. *de la Grange*, by means of the expansion of the function $f(x+i)$ into a series of the form $fx + pi + qi^2 + ri^3$, &c. and, in the same memoir, the learned author remarked that the true principles of the theory of fluxions were contained in the theory of the developement of analytic functions.

Persuaded that the theory of Mr. STOCKLER possessed the semblance only of novelty and originality, and that the method

of the limit of the hypothetical fluxions was in fact the method of the limit of the finite differences of quantities disguised by a new notation, we have been obliged to state our sentiments in express, but we hope not in harsh, terms; for we think that the present essay affords an happy presage of the future state of Science in Portugal.

After all, it can be no disgrace to the author of the present memoir to have failed, in what so many great men have failed before him; and it must be considered as highly honourable to him, to have insisted on the same steps which have led one of the first Geometricians of Europe to the discovery of the true principles of the fluxionary calculus.

Solution of the Problem proposed by the Royal Academy of Sciences, on the Method of Approximation as given by M. Fontaine. *By* Mr. COELHO DA MAYA.

The present volume contains two solutions of this problem. The one before us, though not prior in point of order, is so in the time of its publication. The rule proposed by M. *Fontaine* for the integration of a quantity yx is thus announced. 'The integral of the element (ydx), (y) being any function whatever of (x), is equal to the product of $\left(\frac{x}{2^{n-1}}\right)$, and of a series of which the terms are determined by substituting successively for x in the given function, $\frac{x}{2^n}$, $\frac{3x}{2^n}$, $\frac{5x}{2^n}$, $\frac{7x}{2^n}$, — — — $\frac{(2n-1)x}{2^n}$; and the more exactly, the greater the whole positive number (n) is.'

The method of the demonstration of this rule is as follows: —let y be represented by φx; increase x by a quantity z, and φx becomes $\varphi(x+z)$ or by developing this function $= \varphi x + z\varphi' x + \frac{z^2\varphi'' x}{2} + \frac{z^3\varphi''' x}{2\cdot 3}$ + &c: but, since $\varphi x = y$ $\varphi' x = \frac{\dot{y}}{\dot{x}}$, $\varphi'' x = \frac{\ddot{y}}{\dot{x}^2}$. &c.

$\therefore y$ or φx is transformed into this series

$y + \frac{z\dot{y}}{\dot{x}} + \frac{z^2\ddot{y}}{2\dot{x}^2}$ + &c. (the series given by Taylor). Now $\dot{y}x$ is the element of an area, and therefore $f\dot{y}x$ is the area itself, which may be conceived to be divided into an infinite number of small rectangles; hence $f\dot{y}x$ is the sum of these rectangles; or, if the several ordinates be designated by y, y',

y, y', y'', y''', &c. and their equal bases by $\frac{x}{m}$, it is plain that $\int yx = \frac{x}{m}(y'+y''+y'''+\text{&c})$. Now y', y'', y''', &c. may be determined by the preceding series $\left(y + \frac{zy}{x} + \text{&c.}\right)$ by substituting for z, respectively the quantities $x\left(\frac{m-mr}{mr}\right)$, $x\left(\frac{m+r-mr}{mr}\right)$, $x\left(\frac{m+2r-mr}{mr}\right)$, &c.

After these substitutions are made for the quantities, y', y'', &c. the equation $\int yx = \frac{x}{m}(y'+y''+\text{&c.})$ is put into fluxions, in order to determine the relation between m and r, which relation is $r=2m$; it likewise appears that the quantity m is infinite.

To determine that m must be of this form, 2^{n-1}. the author remarks that, since m must be a whole number and infinite, and moreover such that the equation $m=\frac{r}{2}$ may obtain generally, the quantity 2^n (n being a whole number very large) is what will satisfy all the conditions which the analysis discovers to be necessary; so that we must put $r=2^n$, whence $m=2^{n-1}$.

If now these values of r and m be substituted in the series which represents the value of $\int yx$, it will appear that

$$\int yx = \frac{x}{2^{n-1}}\begin{cases} y + x\frac{(1-2^n)}{2^n}\frac{y}{x} + \frac{x^2(1-2^n)^2}{2.2^{2n}}\frac{y}{x^2} + \text{&c.} \\ y + x\frac{(3-2^n)}{2^n.}\frac{y}{x} + \frac{x^2(3-2^n)^2}{2.2^n}\frac{y}{x^2} + \text{&c.} \\ \text{- - - -} \qquad \text{- -} \\ y + \cdot\, x\frac{(2^n-1-2n)}{2^n}\frac{y}{x} + x^2\frac{(2^n-1-2n)^2 y}{2.2^{2n}.}\frac{y}{x^2} + \text{&c} \end{cases}$$

where the first row, or series, is what arises by substituting in the function (y), $\frac{x}{2^n}$ for x;

the second series is the value of y, putting in it $\frac{3x}{2^n}$ for x &c.

the last is the value of y, putting $\frac{2^n-1}{2^n}x$ instead of x;

and it is thus that the truth of M. *Fontaine*'s rule is shewn. The greater or less degree of proximity to the truth which this rule has, according as the quantity n is greater or less, appears, says

says the author of the present memoir, from this consideration; that the calculus is only exact when 2^n is an infinite number; and therefore, the true value of the integral will be more nearly assigned, the greater the whole positive number n is.

After having examined the above method of M. COELHO DA MAYA, we are not inclined to rank the demonstration which he has exhibited among those which are recommended by their evidence, their exactness, or their conciseness; the latter quality, perhaps, the nature of the question itself makes not of easy attainment; yet a stricter adherence to the *rigor geometricus* would have been no ill compensation for any defect which might arise, for too minute a particularity, or for too expanded a developement. The demonstration which we have been considering is formed on a plan, and on principles, too similar to those which are admitted in the method of Infinities; a method that needs not now be called to the aid of the mathematician, who knows the various and many improvements which the Analytic Art has of late years received. Moreover, the way of proving the convergency of the results to the truth (the convergency dependent on the value of n) is by no means an eligible one:—to reason downwards, from infinite to finite, is to depart from the natural and obvious course of mathematical investigation, and indeed of investigation of any kind.

The sole object of the present memoir is not the demonstration of M. *Fontaine*'s rule. The author compares this rule, on the grounds of conciseness and commodiousness, with others by which certain computations may be made and expressions obtained; such, for instance, as the expressions for the sine and cosine of an arc. He also makes some observations on the convergency of series, and shews how a series that converges slowly may be made to converge more quickly; for instance, the series $x - \frac{x3}{2.3} +$ &c. which expresses the sine of an arc x, converges with sufficient rapidity if x be small ($30°$): but, if the arcs be very great, the series diverges while $2(m-1)(2m-1)$ is x^2; for, since the m^{th} term is

$$\frac{x^{2m-1}}{2.3 \text{ — — —} 2(m-1)(2m-1)}$$ the $\overline{m-1}^{th}$ term is

$$\frac{x^{2m-3}}{2.3 \text{ — — —} 2(m-2)(2m-3)}$$ and therefore the ratio between these terms is $\frac{x^2}{2(m-1)(2m-1)}$; which is greater than unity if $2(m-1)(2m-1)$ be $< x^2$. Hence, in great arcs,

arcs, this series is very incommodious, since so many terms must be calculated before the series converges; converge it always will, since, by increasing m, the quantity $2(m-1)(2m-1)$ must ultimately exceed x^2. The series, however, may be rendered very commodious for practice, by the substitution of another arc for x, which has the same sign.

The merit of this remark does not belong to (and probably it is not claimed by) the author of this memoir; it is to be appropriated to M. *D'Alembert*, who first made it in his *Opuscules Mathematiques*.

Other instances are given of transformed series, which converge more quickly than given series; the log. $1+x=x-\frac{x^2}{2}+\frac{2^3}{3}$ &c. which does not converge if x be greater than 1, may be transformed into another which shall always converge, however great x be, by putting $z=\frac{x}{1+x}$. This transformation we could likewise refer to its author: but Mr. Coelho da Maya, in all probability, inserts these observations not as his own, but because they were pertinent to the subject of which he was treating.

Additional Considerations on the Rule of M. Fontaine, *to resolve by Approximation the Problems reducible to Quadratures.* By Mr. Monteiro da Rocha.

The demonstration of this rule was the subject of the memoir of Mr. *Coelho da Maya*, which we have already considered. The author of the present memoir divides it into six sections, in the first of which he considers what is the true object of demonstration, and the course most natural and obvious to be pursued towards the attainment of it. He remarks that the equation $m=2^{n-1}$ (m being one of the equal parts into which the abscissa is divided) is not to be adopted by an arbitrary assumption, but must flow from the nature and peculiar circumstances of the operations employed in the investigation; for, if such an assumption as $m=2^{n-1}$ could be made, the demonstration of M *Fontaine*'s rule would be a matter of the slightest difficulty. The proof of this rule, as given by the present writer, is of the inductive kind; for instance: if $y=\varphi x$ (x being the abscissa, and y the ordinate, and φx a function of x) he first erects an ordinate from the middle point of the abscissa, and draws a tangent to the point where the ordinate meets the abscissa; which tangent, meeting the two extreme ordinates, forms a trapezium of which the area is consequently $=x\varphi\frac{x}{2}$: which is greater or less than the area of the curve, as the curve is concave or convex to its axis; the next step is to divide each

half of the abscissa into two other halfs, to erect ordinates at the point of bisection, to draw tangents, &c. so as to form two new trapeziums, the sum of the areas of which is easly determined to be $\frac{x}{2}\left(\varphi\frac{x}{4}+\varphi\frac{3x}{4}\right)$; which is the second approximation, and nearer to the true area of the curve than the former. Proceeding in a similar manner by the bisection of the parts of the abscissa, the third approximation will appear to be $\frac{x}{4}\left(\varphi\frac{x}{8}+\varphi\frac{3x}{8}+\varphi\frac{5x}{8}+\frac{7x}{8}\right)$; and thus, if the abscissa be divided into 2^n parts, it is inferred by induction that the value of the area of $\int yx$· would be nearly $\frac{x}{2^{n-1}}\left(\varphi\frac{x}{2^n}+\varphi\frac{3x}{2^n}+\varphi\frac{5x}{2^n}-\right.$ $\left.---+\varphi\frac{2^n-1}{2^n}x\right)$

In the second section is investigated the convergency of M. *Fontaine*'s rule. According to that gentleman, the results should be more and more exact, the greater the number n is; and it becomes an object of inquiry what is the degree of convergency which obtains among the several results, substituting for n successively the numbers, 1, 2, 3, 4, 5, &c. A theorem is proposed, by which this degree of convergency, under certain restrictions, may be estimated; and the theorem is this:—if any curve be terminated by 2 finite ordinates, and is always convex towards the same parts, and its area be estimated according to the method of M. *Fontaine*, then, substituting for n all the natural numbers in their order, the errors of any two successive results are ultimately in the ratio of 4 to 1. The demonstration of this theorem is founded on the truth of the 5th Corollary of the 11th Lemma of the Principia; and the author, considering farther under what circumstances the corollary of Newton takes place, proposes to estimate the convergency of the several approximations by examining the magnitude and position of the radius of curvature.

In the third section, the writer considers what consequences follow from the inquiry instituted in the second section.

In section IV, we find a method of rendering the rule more converging; as follows: in the substitution of a number n, let the result be R, with an error u; then, in the substitution of $n+1$, the result is R' with an error $\frac{u}{4}$ nearly (as appears in the second section): hence $\int x\cdot\varphi x = R+u$ and $\int x\cdot\varphi x = R'+\frac{u}{4}$ $\therefore u=\frac{4(R'-R)}{3}$ and $\int x\cdot\varphi x=\frac{4(R'-R)}{3}$: but, by the form given by M. *Fontaine*, it appears that

$$R=\frac{x}{2^{n-1}}\left(\varphi\frac{x}{2^n}+\varphi\frac{3x}{2^n}+\varphi\frac{5x}{2^n}---+\varphi\frac{\overline{2^n-1}x}{2^n}\right)$$

and

and $R' = \frac{x}{2^n}\left(\varphi\frac{x}{2^{n+1}} + \varphi\frac{3x}{2^{n+1}} + \varphi\frac{5x}{2^{n+1}} \text{---} + \varphi\frac{2^{n+1}-1}{2^{n+1}}x\right)$

hence $\int x \cdot \varphi x = \frac{4R'-R}{3} = \frac{x}{3\cdot 2^{n-2}}\left(\varphi\frac{x}{2^{n+1}} + \varphi\frac{3x}{2^{n+1}} + \varphi\frac{2^n+1}{2^{n+1}}x\right)$

$$-\frac{x}{3\cdot 2^{n-1}}\left(\varphi\frac{x}{2^n} + \varphi\frac{3x}{2^n} + \varphi\frac{5x}{2^n} \text{---} + \varphi\frac{2^n-1}{2^n}x\right)$$

where the series converges much more quickly than in M. *Fontaine*'s form. This series is applied to investigate the logarithm of 2 $\left(f\frac{x'}{1+x}\right.$ when $x=1$ and the arc of 45° $\left(f\frac{x\cdot}{1+x^2}\right.$ when $x=1$)

In the fifth section, is given a second method for making the series more converging, which admits of a more extensive application than the former. The new formula for the integral of $x\cdot px$ is

$$\frac{x}{2^n-1}\left(\varphi\frac{x}{2^n} + \varphi\frac{3x}{2^n} + \&c. + \varphi\frac{2^{n-1}}{2^n}x\right)$$

$$\frac{+x^3}{3\cdot 2^{3n}}\left(\varphi'\frac{x}{2^n} + \varphi\frac{3x}{2^n} + \&c. + \varphi'\frac{2^{n-1}}{2^n} + \right)$$

$$\frac{+x^5}{3\cdot 4\cdot 5\, 2^{5n}}\left(\varphi''\frac{x}{2^n} + \&c.\ \&c:\right.$$

$$+ \&c. + \&c.$$

where $\varphi'x$, $\varphi''x$ &c. are functions derived from φx.

Section vi. treats of those cases, in which neither M. *Fontaine*'s method nor the two preceding can take place.

After all deductions have been made, there will still remain a very considerable portion of merit due to these mathematical papers. The cultivation of science in Portugal is commenced, and its cultivators will daily acquire new skill and richer materials. If we hope that this new society may emulate that famous Academy which is now no more, we hope for it a portion of fame which none but an enthusiast will despise; if we hope that it may experience a better fate, we shall not less express the benevolence of our wishes, nor the reasonableness of our expectations.

so far,
Wood....e.

Eulogium of M. d'Alembert. By M. Garçaõ Stockler.

M. *d'Alembert* was a member of this Academy, and this tribute of praise has in consequence been here paid to his memory. Few particulars of his life are related in it, and these are already well known to the literary world. The most essential part of the eulogium, and which stamps some value

on it, is the analysis of all the works of this celebrated genius to which task the author of this paper, who is a mathematician *, seems to have rendered himself competent by a deep study of them. The oratorical part of the paper is chiefly of a panegyrical cast, unlike the academical eulogies of Fontenelle, which are the true models of such compositions. The author of a panegyric writes as a warm admirer, who does not wish to find any fault in the object of it; while the writer of an academical eulogium assumes a more impartial tone, which gives more weight to the praise which he bestows. We shall not however throw much blame on a mathematician, for being a warm admirer of *d'Alembert*.

For an account of *Condorcet*'s ample eulogium on this celebrated man, see M. Rev. vol. lxxvi. p. 238.

This volume is terminated by a catalogue of books composed by several members of the society, and printed by order of the Academy; from which circumstance, it appears that the labours of this literary body have been directed to instruct and enlighten the Portuguese in many different branches of knowlege. We have so few opportunities of receiving Portuguese books, that it will, probably, excite the curiosity of many of our readers, to peruse this catalogue of recent publications in that part of Europe.

1. *Breves Instrucçoẽs*, &c. Short Directions to the Correspondents of the Academy, relative to collecting natural Objects for the Institution of a National Museum. 8vo pamphlet.

2. *Memorias Sobre*, &c. Memoirs on the Method of perfecting the Manufacture of Oil in Portugal, presented to the Academy by Mr. DALLA BELLA. 1 vol. 4to.

3. *Memoria Sobre a Cultura*, &c. Memoir on the Cultivation of the Olive Tree in Portugal, presented to the Academy by the same Author. 1 vol. 4to.

4. *Memorias de Agricultura*, &c. Memoirs of Agriculture, which have obtained Prizes from the Academy. 2 vols. 8vo.

5. *Paschalis Josephi Freirii Mellii, de Historia Juris Civilis Lusitani Liber singularis.* 1 vol. 4to.

6. *Ejusdem Institutiones Juris Civilis et Criminalis Lusitani.* 5 vols. 4to.

7. *Osmia*, a Tragedy, which obtained a Prize from the Academy. 4to pamphlet.

8. *Vida*, &c. Life of Edward, Infant of Portugal, by A. DE REZENDE. 8vo. pamphlet.

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* A *memoir* by M. STOCKLER, on fluxions, has been noticed in this article.

9. *Vestigios*,

9. *Vestigios*, &c. Remains of the Arabic Language in Portugal, or Etymological Lexicon of the Portuguese Words and Names of Arabic Origin, composed by Order of the Academy, by FR. JOHN DE SOUZA. 1 vol. 4to.

10. DOMINICI VANDELLI, *Viridarium Grysley Lusitanicum, Linnæanis Nominibus illustratum.* 1 vol. 8vo.

11. *Ephemerides*, &c. Nautical Ephemerides, or Astronomical Diary for the Year 1789; calculated for the Meridian of Lisbon. 1 vol. 4to. The same for every succeeding year till 1798 inclusive.

12. *Memorias Economicas*, &c. Economical Memoirs of the Royal Academy of Sciences of Lisbon. 4 vols. 4to.

13. *Collecçaõ*, &c. Collection of inedited Books of Portuguese History, relative to the Reigns of John the 1st, Edward, Alphonsus the 5th, and John the 2d. 3 vols. folio.

14. *Avisos*, &c. Interesting Advices respecting apparent Deaths. 8vo pamphlet.

15. *Tratado*, &c. Treatise on the Physical Education of Children, for the Use of the People of Portugal, by FRANCIS DE MELLO FRANCO. 1 vol. 4to.

16. *Documentos*, &c. Arabic Documents of Portuguese History, transcribed from the Originals in the Tower of Tombo, (the Royal Archives in Portugal,) and published with the Portuguese Translation, by FR. JOHN DE SOUZA. 1 vol. 4to.

17. *Observaçõ̃es*, &c. Observations on the principal Causes of the Decline of the Portuguese Power in Asia, written by *Diego de Couto*, &c. by Mr. AMARAL. 1 vol. 8vo.

18. FLORA COCHINCHINENSIS *sistens Plantas in Regno Cochinchina nascentes. Labore ac Studio* JOHANNIS DE LOUREIRO, *Regiæ Scientiarum Ulyssiponensis Academiæ Socii.* 2 vols. 4to.

19. *Synopsis Chronologica*, &c. Chronological Synopsis of Materials for the History and Study of Portuguese Literature. By Mr. FIGUEIREDO. 2 vols. 4to.

20. *Tratado*, &c. Treatise on the Physical Education of Children, for the Use of the People of Portugal, by M. ALMEYDA. 1 vol. 4to.

21. *Obras Poeticas*, &c. Poetical Works of PETER ANDRADE CAMINHA. 1 vol. 8vo.

22. *Advertencias*, &c. Advices respecting the right or wrong Use of the Mineral Waters of Caldas da Rainha, by Mr. TAVARES. 4to. pamphlet.

23. Memoirs of Portuguese Literature. 6 vols. 4to.

24. *Fontes proximas*, &c. The immediate Sources of the Code of Portugal of Philip the 2d, by Mr. FERREIRA GORDO. 1 vol. 4to.

25. *Diccionario*, &c. Dictionary of the Portuguese Language. 1 vol. folio.

26. *Compendio*, &c. Abridgment of the Theory of Limits, or Introduction to the Method of Fluxions, by Mr. STOCKLER, Member of the Academy. 1 vol. 4to.

27. *Ensayo*, &c. An Economical Essay on the Trade of Portugal, and its Colonies, by Mr. AZEREDO COUTINHO. 1 vol. 4to.

28. *Tratado*, &c. Treatise on the Art of Surveying Lands, by Mr. CABRAL. 1 vol. 8vo.

29. *Analyse*, &c. Chemical Analysis of the Mineral Waters of Caldas, by Dr. Withering, Member of the Academy. Published in English and Portuguese, by Order of the Society.

If any of the more recent publications here enumerated should reach our hands, we shall endeavour to make our readers farther acquainted with their contents.

to here, from page 579 Corrêa.

ART. XVII. *Floræ Danicæ Iconum Fasciculus Vicesimus.* Folio. *Hafniæ*, 1797. Sold in London by Mr. White.

THE descriptions which accompany these excellent engravings are so extremely brief, that we cannot pretend to give a very critical account of the performance; especially as it is impossible for us to gain access to the *plants* which are here represented: but we scruple not to avow our full persuasion that the plates are indeed most admirably executed. The publication of this work commenced in the year 1761; and it has been continued with uncommon regularity, considering the nature of the undertaking, and the accidents and interruptions to which, in a series of so many years, it must naturally have been exposed. G.

ART. XVIII.

M. GIRARD (*Ingénieur des Ponts et des Chaussées*) has published a treatise on the Resistance of Solids. Of this work, in point of criticism, we are unable at present, from want of time, to say any thing definite: but a superficial glance over its contents, and a hasty perusal of some of its parts, afford us reason to think that it is by no means an unimportant nor an ill-executed work. It is divided into four sections, the first two of which are purely theoretical; the third contains experiments made on the resistance of oak and fir; and the fourth is particularly destined to theoretical considerations and experiments, relative to the inflexion of bodies supposed to be perfectly elastic. What is written seems to be written with considerable perspicuity, and the experiments apparently have been made with method and exactness. In our next Appendix, we shall be able to give a fuller and more particular account of the work. Wood.

I N D E X

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